

OBSERVATIONS
on
MR. SIMMONS'S *DETECTION*, &c. &c.
with
A DEFENCE
of the
CESAREAN OPERATION,
derived from Authorities, &c. &c.

A DESCRIPTION OF THE FEMALE PELVIS,
AN EXAMINATION OF DR. OSBORN'S OPINIONS,
RELATIVE TO EMBRYULCIA,
and
AN ACCOUNT OF THE METHOD OF DELIVERY
BY EMBRYOTOMY.

ILLUSTRATED BY NUMEROUS ENGRAVINGS.

BY JOHN HULL, M.D.

Member of the Corporation of Surgeons, and of the Physical Society
of London; of the Natural History Society of Edinburgh; and Secretary
of the Literary and Philosophical Society of Manchester.

"NEC SIC INCIPIES, UT SCRIPTOR CYCLICUS OLIM:
FORTUNAM PRIAMI CANTABO, & NOBILE BELLUM.
QUID DIGNUM TANTO FERET HIC PROMISSOR HIATU?
PARTURIUNT MONTES, NASCETUR RIDICULUS MUS."

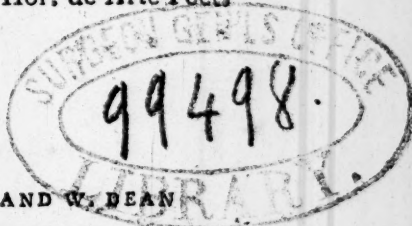
Hor. de Arte Poet.



Manchester,

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Γνώθι σεαυτόν.

ΣΟΛΩΝ.

OBSERVATIONS

ON

MR. SIMMONS'S "*DETECTION &c. &c.*"

PART FIRST.

CHAP. 13 290

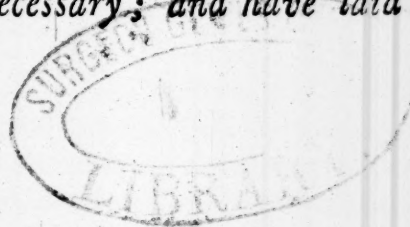
“ Sumite materiam vestris, qui scribitis, æquam
Viribus: et versate diu, quid ferre recusent,
Quid valeant humeri—”

Hor. de Arte Poet. l. 38 & seq.

ADVERTISEMENT.

BY the first part of this Letter, the reader may, perhaps, be amused. It was written as a rejoinder to a very singular pamphlet, advertised as "A Detection of Dr. Hull's Defence of the Cesarean OPERATION;" but published under the more intelligible, though not more correct title of "A Detection of the Fallacy of Dr. Hull's Defence of the Cesarean Operation."

From the second part both information and instruction will, I hope, be derived. It contains the substance of a work announced for publication, under the title of a Treatise on the Cesarean Operation, previously to Mr. Simmons's unprovoked attack upon me. In this part I have criticised a very curious letter, addressed by Mr. S. to the Editors of the Medical and Physical Journal.—I have given a brief historical account of the Section of the Symphysis Pubis, and of the Cesarean Section, as practised upon the dead and living female, with tables of all the successful and unsuccessful foreign cases, which I have been able to collect.—I have pointed out the circumstances, rendering the operation necessary; and have laid down



directions for accomplishing the delivery under circumstances, supposed to require the performance of the Cesarean operation; but in which it is neither necessary, nor admissible.—I have entered into an inquiry concerning the most proper time for having recourse to the operation; the best method of performing it; the sources of danger; and the subsequent treatment of the patient.—I have endeavoured to make a fair estimate of the comparative value of the life of the fœtus in utero, and the mother, according to the different conditions of the latter at the time of parturition. I have examined the opinions and precepts of Dr. Osborn, relating to hysterotomy and embryulcia; I have shewn both by reasoning and actual experiments, that they are ill founded; and I have attempted to lay down rules and directions, that are less exceptionable.—I have entered into a discussion of the propriety and advantages of inducing premature labour, with the view of superseding the necessity of embryulcia and hysterotomy.—And I have introduced a sketch of the female pelvis in its natural state, with an account of the distinctive characters of its deformities, and an enumeration of the causes, by which these are induced, and of the means, by which their different degrees may be most accurately determined.

A complete history of the human pelvis is a great

desideratum in Midwifery, which it is my intention to endeavour to supply, in the best manner I am able, at some future period; provided I shall be favoured with the requisite communications.† Of this publication I deem it proper to offer here the following prospectus. It is intended:

1st. To describe the pelves of premature and mature male and female fetuses.

2. To point out the gradual expansion, or increase of the male and female pelvis at different periods of infancy and childhood, and at puberty.

3. To describe the male and female pelvis in the adult state, and to point out the varieties, observable in their forms and dimensions.

4. To give descriptions of the pelves of ricketty males and females of different ages, from infancy to manhood; and to point out the great variety and extent of deformity, observed in the pelves of different adults.

† My residence in the country allowing me access to but few Anatomical Collections, I am under the necessity of soliciting communications for this intended work; which may be addressed to me at Manchester, or to the care of Mr. Bickerstaff, Bookseller in the Strand, and will be gratefully acknowledged.

5. To describe the changes, produced in the form and capacity of the pelves of adults by Malacosteon, from the slighter deviations to those extreme degrees of distortion, which render delivery per vias naturales impracticable.

6. To describe the alterations, produced in the dimensions, figure &c. of the pelvis by Exostosis, Fracture, Dislocation, and Anchylosis.

7. To give figures of those pelves, which it is deemed most necessary to illustrate, or, at least, outlines of their superior apertures. And

8. To give tabular views of those pelves, which it does not appear necessary to describe more minutely, agreeably to the plans, exhibited in the four Tables at the end of this work.



A

SECOND LETTER

to

MR. WILLIAM SIMMONS.

PART I.

Manchester, May 22d 1799.

SIR,

After repeated attentive perusals of the Pamphlet, which you have been pleased to name a "Detection of the Fallacy of Dr. Hull's Defence of the Cesarean Operation," I feel myself justified in declaring, that I perceive not the least connection between the *Title* and *Contents* of your book. And, whilst I am endeavouring to obviate the mischief, which may accrue from the erroneous notions, disseminated and inculcated by you, upon different important points of practice in Midwifery; and to render your future conduct towards your professional brethren more decent and manly than it has hitherto been; I

should think myself guilty of a considerable omission, if I neglected to inform you, that the public, in my opinion, is too respectable to be deceived by false colours, and to advise you to cancel your Titlepage, and substitute for "A Detection &c."

AN

OLLA PODRIDA,*

&c. &c.

When I had looked over your former work, entitled "*Reflections* on the Propriety of performing the Cæsarean Operation," I was enabled to pronounce a just character of it in a few significant words, which I deem it unnecessary to repeat†: But your *Detection* is a work of a much more extraordinary nature, consisting of imperfect statements of my arguments, misrepresentations, erroneous and irrelevant matters, extracts from *Tristram Shandy*, *Hudibras*, &c. &c. This heterogeneous compound I shall now proceed to examine, and, if I should not notice every part of it, I hope you will not ascribe the omission either to indolence, or inability on my part to reply,

* *Olla podrida* est un composé de toutes sortes de viandes
LE SAGE.—i. e. A Dish of all sorts. † See my *Defence* p. 6.

but to my being better employed. And, if you should lay particular stress upon any fact, argument, or opinion, which I have happened to overlook, or to treat as of little consequence, you will, perhaps, have the goodness to point it out to me, and I will promise to consider it more fully hereafter.

At page 102 of your *Detection*, you make this declaration, “ *I used as much delicacy towards Dr. Hull as was practicable*, for I cautiously abstained from mentioning his name; and so little appearance did my pamphlet convey of a personal attack, that *people in general* who read it here, did not suppose that it was aimed at any individual.”

Upon this passage I have to offer a few remarks: 1st. You would have shewn greater delicacy, if you had been less clamorous upon the subject, immediately after the operation, and had deferred advertising your intended publication, till it was ready for the press. The Operation, to which you have alluded as “ a late occurrence,” was performed on the 24th of September, 1798; your advertisement appeared in WHEELER’S MANCHESTER CHRONICLE, on the sixth of October, and your book was not in the press till after the 5th of November. Still more delicacy would have been mani-

fested, if you had withholden your advertisement, till your work was ready to be laid before the public. And as you had nothing, either material, or new, except *some old cases new-modelled*, to offer upon the subject, why could you not have deferred your publication for a year or two, till you could have made yourself tolerably acquainted with the operation, and could have produced something really worth communication? The reason is too obvious. You would, by this means, have lost the opportunity of making a concealed invidious blow at the gentlemen, to whom the management of the case was intrusted. If your motives were honourable, as you state them to be, why did you not step forward, and oppose the practice of the Cesarean Operation, when I first saved a life by it in the year 1794? Or, when Dr, James Hamilton, Teacher of Midwifery in Edinburgh, and Son to the Professor, performed it unsuccessfully in the year 1795?—Or, when Dr. Denman, and Mr. Benjamin Bell published their sentiments in favour of this Operation? The reason to me, and many with whom I have conversed upon the subject, is perfectly clear. You had never *before* had an opportunity “to gratify your spleen” (as you express it) by an attempt to throw an odium upon your rival practitioners.

2dly. Because *you profess* to feel so much interest, and sympathy in the sufferings, peculiarly incident to the female sex ; and to manifest so much zeal and promptitude to defend the ladies *against professional cruelty*, and private insult* ; do you expect that *every one must admit*, that you are a man of fine feelings, high honour, and undoubted courage ? In my opinion, if you really feel so much for the other sex, you would have remained silent upon this painful subject, lest by the agitation of it, an alarm should be excited amongst them, which all your eloquence, and Quixotic professions of service, might be unable to remove or appease.

3dly. If you understand by *people in general* your own family, or two or three of your most intimate friends, I cannot pretend to contradict the position : But if you mean the phrase to be taken in the usual acceptation, I am disposed to maintain, that you have not taken the steps necessary to ascertain this matter ; and I cannot avoid informing you, in justice to myself, that all the medical men, and every other person, whom I have heard give a decided opinion upon the subject, have considered your attack as highly improper, and ungenerous ; many have

* Detection, p. 4 and 5.

declared it to be base ; some have even deemed it wicked. When an operation of so uncommon a kind takes place, it necessarily gives rise to a great deal of conversation, in the vicinity of the place where it has happened, and to all those who had been thus made acquainted with the case, your designation of the occasion (" a late occurrence"), which led you to publish your pretended sentiments upon the subject, would be a sufficient identification of the operator, whom you accuse of inexcusable ignorance, or cruel inattention. And those readers, who had not been previously made acquainted with the unsuccessful event of this operation, would be naturally led to enquire, to what late occurrence you alluded. To persons at a distance from Manchester, especially those who are unacquainted with your disposition, your insinuations and unmanly mode of proceeding may convey an appearance of delicacy ; but to myself and those, who are acquainted with your strong propensity to accuse your professional brethren, these are aggravating circumstances. Hence I have been led to treat your conduct with considerable freedom in my Defence of the Cesarean Operation.

This freedom, although by no means equal to your deserts, you are pleased to name *boorish vulgarity*, and to complain loudly of it. Per-

haps, you may suppose, I do not possess an equal degree of urbanity with yourself. It is not, impossible that you may conceive few can boast such complete possession of *les manières, les agréments, les graces, la tournure, & les usages du beau monde* as yourself. I acknowledge, without hesitation, that I cannot pretend to such an amazing extent of *versatility* (a quality greatly extolled by Lord Chesterfield) as yourself. When I witness your extraordinary complimentary powers, as displayed in the Dedication of your *Reflections*, and in pages 65, 86, and 102, of your *Detection*, I say in the language of Juvenal,

Quid Romæ faciam? *mentiri nescio* ———

SAT. III.

“What shall I do at Rome? I want the art
To speak a language foreign to my heart.”

OWEN.

When I observe you pouring forth a torrent of ribaldry in prose and verse,* that would do honour to the lips of the *Poissarde en chef* at Billingsgate, I am astonished that you have refrained from exclaiming with Ovid,

“Jamque opus exegi: quod nec Jovis ira nec ignes,
Nec poterit ferrum, nec edax abolere vetustas.

* See page 35, &c.—The Epigram will be noticed more particularly afterwards.

Cum volet illa dies, quæ nil nisi corporis hujus
 Jus habet, incerti spatium mihi finiat ævi :
 Parte tamen meliore mei super alta perennis
 Astra ferar : *nomenque erit indelebile nostrum.*
 Quaque patet domitis. Romana potentia terris,
 Ore legar populi : *perque omnia secula famâ*
 (*Si quid habent veri vatum præsagia*) vivam."

METAMORPH. Lib. 15.

"And now the worke is ended, which Jove's rage,
 Nor fire, nor sword shall raze, nor eating Age.
 Come when it will my death's uncertaine houre ;
 Which of this body only hath a power :
 Yet shall my better part transcend the skie ;
 And my immortall name shall never die.
 For where-so-ere the Roman Eagles spread
 Their conquering wings, *I shall of all be read :*
 And, if WE POETS true presages give,
 I in my Fame eternally shall live."

SANDYS.

And when I find you coolly proposing (p. 54 & 55.) to have my abdomen laid open with a *horn*, I deem it highly necessary to get out of your way, and warn the public of the danger by the cry of,

"Fœnum habet in cornu, longe fuge ———"

HORATII Sat. L. 1.

At page 28, you very unjustly represent me, as using improper language to Dr. Haighton, in the following ironical observation, " he ap-

plies his *courtly* phrases through me to his ingenious friend Dr Haighton, and I have no objection against standing on the foreground on such an occasion." Permit me, Sir, to tell you ; 1st. that you are rather too apt to place yourself in the foreground ; and 2dly, that I have, *never in my life* applied improper language to Dr. Haighton, or *any other gentleman*. I have accused *you* of aspersing the characters of Rousset and Villanova, without foundation, and have questioned your knowledge of Latin in consequence of your making this assertion in your Reflections. " A fondness for the marvellous is prominent in many of his histories, and in none more than in the case communicated by his friend Villanova, who writes that he never knew a patient recover on whom the operation had been performed by an incision in the side (the usual way) but, in the case he relates, he accomplished the delivery by applying the actual cautery, so as to penetrate through the abdominal muscles and uterus."

Pag. 9 & 10. Pray, Sir, has Dr. Haighton made any observation in his paper, that resembles this ? Why would you then be *so kind* as to make him participate in the censure, which you have drawn upon yourself, by an observation *peculiarly* and *exclusively* your own. I have proved, in my former letter, that the subject of the case in question is expressly stated, by both Villa-

nova and Rousset, *to have been not pregnant* at the time of the application of the actual cautery; that it was merely a collection of *pus*, which was evacuated by the cautery; and that she *afterwards* conceived, and bore a child. We shall now see how coolly, and ingeniously, you get over this by the following explanation: "I had been guilty of an error in referring from memory, but had certainly no design of misrepresenting Villanova's account of this case; I, therefore, make this atonement to him, although the matter, on which the Dr. has been so lavish of paper and invective, *be not of the smallest moment in relation to the point at issue.*" Detection, p. 100. Indeed, Sir? When you have accused me of having performed *an unjustifiable operation* (a); when you have stated roundly, that "it would be difficult to determine whether the operator deserved most reprehension, for his inexcusable ignorance, or cruel inattention (b)" if on the testimony of the mother the Cesarean Section be performed, and a putrid child extracted, as in the case of Ann Lee, where I was the operator; *Is it not of the smallest moment* to me to be able to prove, that you stand convicted of calumniating, without any other foundation than your own avowed mistaken notion, so respectable an author as Rousset? You urge, in

(a) Reflections, p. 68. (b) Ibid. p. 62.

justification of your conduct upon this occasion, that you “ had been guilty of an error in referring from memory, but had certainly no design of misrepresenting Villanova’s account of this case.”

Is it possible you can have the weakness to imagine, that this excuse will be admitted either by myself, or the public? If you had not Rousset’s work before you, at the time you were writing, how could you quote the *history*, *section*, and *part*, to which you have referred, when speaking of this mistaken case? How could you, in the same page of your *Reflections*, give the annexed quotation in the very words of Bauhin’s Translation—“Quare maritus implorato primum divino auxilio, & janua diligenter clausa uxorem mensæ imponit, abdomini vulnus (*non secus quam porco*) infligit. Verum primo ictu ita feliciter abdomen aperuit, ut subito infans absque ulla læsione extractus fuerit,” and refer to the *Appendix*, *hist.* 1. *pag.* 480? When a man, at the first stroke (*primo ictu*), has deviated from the line of truth, is it honourable, for him to attempt to extenuate his crime by a second deviation from the same line? Confess the truth, and, since you declare that it was not done designedly, acknowledge, that it was from your ignorance of the latin language, that you made this gross misrepresentation, and published the calumnious observation founded upon it. I will next point

out to you what I believe to have been the true source of this error, (the rock, on which you have split,) and answer me *with truth* ; whether my conjecture be not well founded. In the former part of the case it is most certainly mentioned, that the actual cautery was applied to the abdomen of the patient, and, at the end of the history, is this sentence, “ *ab illo tempore filiam enixa, quæ adhuc superstes est,*” which, when translated, stands thus: “ *after that time* she brought forth a daughter, who is still living.” Now supposing that you could neither read the former part of the chapter, nor the intermediate part of the case in question, and that you mistook *ab illo tempore* to signify *at that time*, instead of *after that time*, the solution of this knotty point becomes easy, and you stand recorded *something more* than an excellent latinist.

In the same page, where you have made this unsuccessful attempt to vindicate your conduct towards Rousset and Villanova, you have this curious observation, “ *Or a project*, somewhat in his “ (the Drs.)” way suggests itself to me, namely, to run an actual cautery into the bottom of the womb, and to dress the wound so as to render it fistulous; and, should a poor deformed creature become pregnant, to extract the embryo, immediately on its lapsing into the

womb from the Fallopian tube, by means of a siphon" (or a *cannula*!) "applied to the external opening?" As I wish to avoid all unnecessary severity towards you, I shall suppress a question, that I intended to put here, and shall content myself with informing you, that the project, for dividing the bones of the pubes, at a distance from their symphysis, originated with a very ingenious *pelvitomist*, and advocate for the Sigaultian Operation, the late Dr. John Aitken of Edinburgh, and is published in his Principles of Midwifery. Ed. 3. p. 83. Hence it seems you are unacquainted with the *serious* writers, even of our own Island, upon your favourite section. His words are, "may not this (Hysterotomy) and embryotomy be superseded by a *pelvitomia nova*? viz. two incisions, one on each side, reaching to the ossa pubis, as near the crural vessels as safely may be, so that one may be distant from the other about four inches; and two corresponding to, and touching, the joinings of the rami pubis, and ischiorum. The bones are then divided by the flexible saw, &c." You see how correct you are in stating, "nor would any other person have offered them" (two projects for dividing, or removing the bones, composing the anterior part of the pelvis) "even in a vulgar jest." Detection, p. 78.

You get over the charge of misconstruing the phrase *quo matri parcerent*, "to shew his superior dexterity," with the same easy carelessness, by saying, "With all the Drs. display of learned quotation, it would appear, that he is so poor a latin scholar, as to mistake a *comment of my own*, for a literal translation." *Detection*, p. 21. Delightful justification! Having just shewn how you figure as a *translator*, I now have it in my power to hold you up, to the astonishment of the *Orbis Eruditus*, as a *most excellent commentator*, and might compare you with SCALIGER, if I thought you would consider it a compliment to have a comparison instituted betwixt yourself, and a *Leyden Professor*. Pray, Sir, do you think it more honourable to be the avowed author of a *false comment*, than of a *mistaken translation*?

You also introduce, in the same page, this very curious question; "But can Dr. Hull think such violent abuse justified by a *harmless incidental remark*, that the operator meant to flourish, or to shew his superior dexterity, in making his circular incision, as Dr. Trusler directs, in his learned instructions on the art of carving hams?" Do not mistake me, Sir. It is for *your method of carving characters*, not *hams*, that I have been induced to blame you.

You undertake to justify yourself against the charge of bringing a mutilated quotation from *Mauriceau*, by this assertion, "If the Dr. will look into the *seventh* edition of Mauriceau's works, translated by Dr. Hugh Chamberlen, page 235, very near the top of that page, he will find that there is no such passage as he alludes to, and my long extract was made from that edition of Mauriceau's works." *Detection*, p. 42. As I have not seen the translation referred to, I cannot pretend to determine, whether the passage be there or not; but it is rather an unfortunate circumstance for your affirmation, that Chamberlen's translation was made from the *first* edition of Mauriceau's work, and, for your satisfaction, I will give you Mauriceau's own authority. In the preface to the fifth edition, he says, "je crois qu' il ne me sera pas difficile de vous persuader que celui-cy que je fis imprimer la premiere fois en l' année 1668. la seconde fois en l' année 1675, & la troisiéme en l' année 1681. a été assez bien reçu du Public; puisque le grand nombre des exemplaires que j' en avois fait tirer dans ces trois précédentes Editions, a été entierement distribué il y a déjà du temps, & que Monsieur *Chamberlen*, Medecin du Roy d' Angleterre, le plus renommé qu' il y ait en la ville de Londres dans l' Art des Accouchemens, l' a jugé digne de la peine qu' il a

prise luy-même de le traduire en Anglois, & de le faire imprimer des l' année 1672, &c." The passage that I have blamed you for omitting, is to be found in the fifth Edition of Mauriceau's *Traité*, &c. published in 1712, and also in the sixth edition, a copy of which you have the liberty of consulting, in the Public Library of this Town, founded by H. Chetham, Esq.— And I do not entertain the least doubt, but the same passage has been inserted in every subsequent edition of this work. You have therefore furnished me with an opportunity of bringing an additional accusation against you, viz. that of using a translated copy of a bad edition, when you had access to a better edition of the original.

I shall next bring forward an observation, introduced in page 41 of your *Detection*. "The Dr. next comes to my long extract from Mauriceau, for the length of which I had to plead its importance to the subject under discussion, and he seems to be very angry that I should have gained seven pages to my book, *and yet afford him only one single circumstance to gratify his spleen.*" To convince you, that the extract affords me another opportunity "to gratify my spleen," I shall favour you with this very just conclusion from it, that the anecdote of la Mere

Bouquet, and the pregnant woman in the Hotel-Dieu de Paris, leaves me no room to doubt that a *woman*, as well as a *surgeon*, have deviated from the truth, when speaking of the Cesarean Operation. The degree of dependence, that ought to be placed in the testimony of Mauriceau, will be appreciated hereafter. - And before I quit this subject, you will permit me to remind you, that, in your *Reflections*, you have taken the translation of this *important* extract from Mauriceau upon yourself, by not giving the name of the author, from whom you took it.

The defence you have made against the charge of bringing mutilated extracts from *Dionis* is too singular to pass unnoticed. Your words are, "Leaving the Dr. in full possession of his rimbaldry, I come next to his comment on my quotations from *Dionis*, and here with his usual inversion of intellect, he accuses me (p. 50.) of having brought forward *facts* instead of *reasons*. Men of sense, like *Dionis*, govern their reasoning by their facts; but a Cæsarean operator would be deprived of a colourable pretext for his conduct, if his facts were not made subservient to his theory. It is worthy of the Dr. to accuse others of acting upon theoretical grounds, whilst he has none other for the support of his conduct, for his own experience is against the

operation." You will, I hope, allow me to make two observations upon this quotation; the 1st is, that I have never accused you of bringing forward *facts* from Dionis; indeed I never knew that he had any to offer upon the subject; and the 2d is, that not only my reading, but my own experience, are in favour of the operation in question, since I have preserved one life by it, which neither you, nor any other accoucheur could have done without it. It is evident from your own writings, that you hold the testimony of this author in very little estimation, since you have rejected, without even noticing it, his statement, relative to the birth of Edward the 6th; * and have not given credit to his assertion, respecting the sensibility of the uterus. †

When I replied to your former pamphlet, although I did not entertain the least doubt, but your publication originated in an illaudable spirit of professional jealousy, I might have treated you with more respect, had I not previously heard your veracity impeached; had I not been satisfied, that your conduct to your professional brethren was extremely improper; and

* Reflections, p. 4. † Detection, p. 89. See Defence, &c. p. 50.

had I not been in possession of a written document, which convinced me that you had not published *your real sentiments*, in your Reflections on the propriety of performing the Cesarean Operation.

Of your unfortunate propensity to deviate from the truth, the examples, already given, are sufficiently numerous, in my opinion, to convince the most sceptical mind; and more will be given hereafter.

I shall, therefore, hasten to bring forward an instance of your improper conduct to a colleague at the Infirmary, which occurred in October, 1797. This, with your unprovoked attack upon me, and the other gentlemen, who were consulted in the case of Ann Lee, will be sufficient to justify me in accusing you of aiming to be Censor General, even if it were not in my power to bring additional proofs of such a disposition on your part.

Mr. Hamilton, JUNIOR SURGEON of the Manchester Infirmary, *accidentally* met with Mr. White, and, the conversation turning upon Mr. Baynton's improved mode of treating ulcers of the lower extremities, took him into the Infirmary, to shew him some of the cases, which

were under this method of treatment; and at the same time, shewed him a patient afflicted with the stone in the bladder. This circumstance, by some means, arriving at your ears, you lodged an information against Mr. Hamilton, in consequence of which, he was brought before the Weekly Board, on a charge of introducing Mr. White into the Infirmary, to visit an In-Patient, for the purpose of submitting to his opinion the decision of a full consultation. I need not inform you, that the *board** highly disapproved of your conduct upon this occasion.

You observe (at p. 75.) that "There is indeed no occasion for any one to assume the office of Censor upon the *amiable*† Dr.; for

* I am informed that you generally appear at the *Weekly Board* of the Infirmary, to make an oration, and that, upon one of these occasions, you produced my *Defence of the Cesarean Operation*, and read the passage from it, which proves "that you either have not the *ability*, or the *honesty*, to translate very easy and perspicuous latin," and gives you your choice. Had I not been previously made acquainted, that you had failed, in every attempt, to convert this *Board* into a *Court of Inquisition*, I might have been very apprehensive, lest my book should be deemed *heretical*.

† As a strong proof of the AMIABLENESS of your disposition, I judge it proper to state, that you are not even upon *speaking terms* (except at a consultation, or during an

if, after this warning, he should persist in performing his Cæsarean experiments, the regular officer of the Crown, the Coroner, may, probably, think himself bound to exercise over him the Censorship, with which he is legally invested." I presume, Sir, you speak very feelingly upon this occasion, for it is not very long since the Coroner *actually* found it necessary to *make you acquainted* with the extent of his power.

We will now read, if you please, a copy of one of your own letters, which, in all probability, *as your memory is extremely treacherous*, you may have totally forgotten. It was addressed

(operation) with any of the Physicians, or Surgeons in ordinary, of the Infirmary, except Dr. Ferriar.

The PHYSICIANS are

DR. FERRIAR, *an Edinburgh Graduate.*

DR. BARDSLEY, } *Leyden Graduates.*
DR. HOLME, }

The SURGEONS are

MR. SIMMONS. MR. KILLER.

MR. BILL. MR. WARD.

DR. TAYLOR. MR. HAMILTON.

I believe you do speak to Dr. PERCIVAL, who is Physician Extraordinary to the Infirmary, and has had also the *honour* to receive his Diploma at Leyden.

But are there any Medical Practitioners in Manchester, except Dr. Ferriar, with whom you are upon friendly terms?

to Mr. Barlow, when you corresponded with him upon his successful case of the Cesarean Operation, and he sent it to me to be published in my former letter; but I chose rather to keep it as a *corps de reserve*, that I might bring it forward, if my publication should succeed so far as to make you throw off your mask.

A Copy of YOUR Letter to MR. BARLOW.

Dear Sir,

I most sincerely thank you for your early and friendly communication. The circumstances of the case are equally singular and fortunate. As you seem desirous of giving publicity to it, should you have any objection to the publication of it in some periodical work?

If you will either draw up the case very fully so as to meet your own approbation, or, if your vacations will not allow you to do it, I will with pleasure arrange them, and transmit them to the Editor of any of the above publications, you may approve for insertion.

It is not for me to inform you that it is the only instance of recovery after such an operation that has happened in this Country. The Cases of recovery, reported on the Conti-

ment, have generally been credited cum grano salis: but granting the whole of their statement, it will be matter of curious enquiry to endeavour to ascertain why the cases in this kingdom have been unsuccessful compared with yours, and those above alluded to.

I am, Dr. Sir,

Your obliged and faithful servant,

WM. SIMMONS.

Princess-street, Dec. 31, 1793.

I will next state your sentiments, as given in the year 1798, in the 68th p. of your *Reflections*. "And, I hope that in future all trace of the Cæsarean operation will be banished from professional books; for *it can never be justifiable during the parent's life, and stands recorded only to disgrace the art.*"

Your sentiments appear to have changed again with the present year, for, in your last pamphlet, I find this passage, "And from the time of his " (Dr. Osborn's) " delivery of Elizabeth Sherwood, by the Crotchets, the Cæsarean section has been rendered *unnecessary, simply on account of the narrowness of the pelvis.*"

It will require the exertion of the whole of

your sophistry to reconcile these jarring opinions. In the last quotation, there is most undoubtedly a tacit acknowledgment, that the operation in question is sometimes necessary; in the preceding one it is declared to be unjustifiable; and little doubt will be entertained, in my opinion at least, but, if you had been allowed to publish Mr. Barlow's case, the Cesarean Section would have been sanctioned by your *high* Authority, and would have been accompanied by *Reflections*, diametrically opposite to those, which I have had the honour to comment upon, and yet you had, at this time, received *the full benefit* of Dr. Osborn's instructions. Does it not appear, from what has just been adduced, that you are determined to make a bustle in the world, and that if you cannot come forward fairly and honourably, you will come forward unfairly and dishonourably? Does not almost every action of your life shew, that your delight is in troubled water?

It appears from your *Reflections*, (p. 4.) that you had come to no determination, and even were not engaged in the consideration of the subject, at the time of my latter operation, for you say, "Impressed with these sentiments, I have been induced *by a late occurrence*, to reexamine the subject, and to lay the result of my

enquiry before the public, to prevent, *as far as my influence shall extend*, the revival of an operation that has proved so fatal to my countrywomen." Permit me to ask you, 1st. Whether you did not enter upon your reexamination with a prejudiced mind*? And 2dly, how far you think *your influence* ought to extend upon this subject?—There are strong marks, exhibited in the above quotations, of a singular faculty, which I have before intimated, that you seem to possess, namely, the power of believing, or disbelieving, whatever you please. †

We will now suppose that you had, betwixt the years 1793, and 1798, in consequence of your *extensive reading*, and *profound thinking*, even been induced to change your sentiments upon the Cesarean Operation, should you not have been more charitable to those, who were envelopped in the same obscurity, from which you had so lately emerged in more than meridian splendour?

Having fully demonstrated *que vous êtes sujet à caution*, I shall next shew that you *confessedly almost glory* in your errors, and, afterwards, that you *tacitly acknowledge* yourself obstinate, and prejudiced.

* See Page 10th of this letter. † Defence, p. 118.

For you say, "With an infelicity peculiar to himself, he couples my name, in his petty attacks, with the names of men so truly eminent in their profession, that, to be ranked with them, even in their errors, would be almost an exaltation."

Detection, p. 45. If you be so extremely ambitious of adopting errors, from men of eminence in their profession, I can recommend *Deventer* to you, an author, whom, I think, you have not quoted; and, after you have made yourself familiar with his errors, I will, upon your application, furnish you with a few more, for there is scarcely any practice, however absurd, which is not sanctioned by some eminent name.

The prejudiced state of your mind will appear from this strange assertion. "It so happens that I have enjoyed the benefit of Dr. Osborn's instructions; and embracing his opinions, and regulating my own by his successful practice, *I have followed, and I shall continue to follow*, the doctrines which he has inculcated, in such cases of difficulty, arising from distortion of the pelvis, as shall occur to me."—

Detection, p. 65. You are, it appears,

OSBORN "addictus jurare in verba magistri."

I rejoice at this honest declaration, since it enables me to prove, that you must give up every intention of performing your compound operation.

When I combated the impropriety of it before, I had recourse to the *facts*, and *reasons*, urged against it, with so much effect, by the illustrious Baudelocque, because I hold these in much higher estimation than those adduced by Dr. Osborn: But, since you have thus manifested your predilection for the doctrines of the latter, and *are determined to follow them*, I shall here attack you by a new species of argument, the *Argumentum ad hominem*. As I strongly suspect, that you are unacquainted with every system of logic except that of Hudibras,* (which, I must confess, you manage with great dexterity,) and that you do not understand even the terms of that science, I will first explain to you what is meant by an *argumentum ad hominem*, and will then shew you the application of it, in your own case. It is, Sir, *an argument drawn from the prejudices of an opponent*. Now for the application."

"But," says Dr. Osborn, "when we advert to the maimed and weakened state of the pelvis, and its consequent inability, after the division of the symphysis, to sustain the violence, and repeated exertions unavoidable in the use of the crotchet; and at the same time, when we reflect upon the mischief that the soft parts must inevitably suffer from the division, particularly those

* See Detection, p. 52.

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* See Detection, p. 52.

which lie immediately behind, and in contact with the ossa pubis ; first, by being torn from the bones to which they are naturally connected ; afterwards, by being exposed, for a considerable time, to the external air ; and last of all, by being pressed against the divided edges of the bones, in the passage of the child's head ; when, I say, all these circumstances are considered, we must conclude, that the operation in the case supposed by Dr. Hunter, instead of *giving the mother a good chance for life, and tolerable health, will be as certainly fatal to her as the crotchet must have already proved to the child.* The difficulty and extreme danger of this particular situation, though most reasonably to be expected, do not however rest upon assertion, conjecture, or opinion ; Professor Guerard's case (to be related presently) is exactly in point, and confirms by experiments, what was to be expected *a priori.* The child's head, in that case, was opened after the division of the symphysis had been performed ; but the Professor was, notwithstanding, foiled in every attempt to deliver both by the forceps and crotchet, and the event, in the end, proved fatal to the mother." *Essays, &c. P. 323. **

* I rather suspect that Dr. Osborn has *admonished* you not to persist in your recommendation of this compound operation, as there is something like a recantation in your *De-*

It is also in my power to bring forward a similar testimony from the *Observations Medico-Chirurgicales* par J. F. SACOMBE, Officier de santé pour la pratique des Accouchemens, & pour le traitement des maladies des femmes enceintes, et en couche. *A Paris. L' An 2^{me}. de la République.* Several points of resemblance occur betwixt yourself, and this redoubted opponent of the Cesarean Operation; for, in the 1st place, he is no bad versifier, being the author of a poem, entitled *La Luciniade, ou L' Art des Accouchemens*, Poème didactique, in 8^{vo}. 2dly. His professions, and his manners, do not at all coincide, since you inform us that "He has challenged the advocates for this practice" (the Cesarean Operation) "to public disputations. Several very turbulent scenes of dispute have passed between him and his adversaries. He triumphs as victorious and invincible, they, after contending in vain, to hiss, and cough, and laugh, and talk him to silence, complain, that he will suffer none but himself to utter a word as

tection." But from some communications received since publishing my reflections, which will be mentioned hereafter, *I hope my project will never become necessary, and that the delivery may be accomplished by the crotchet in EVERY dimension of the pelvis, however contracted.*" Page 56.

long as he is able to speak, and that when his animal spirits are exhausted, he then escapes refutation only by retiring, under the pretence of excessive fatigue, from the scene of dispute."*

And I will lay before you the *motto*, prefixed to his work, which, if I understand it, promises great coolness, and moderation." *Vitam impendere vero & sequi probabiliora, nec ultra quam id, quod verisimile occurrit progredi possumus; & refellere sine pertinacia, & refelli sine iracundia parati sumus.*" CICER. Tuscul. II.

3dly. What he cannot effect by argument, he endeavours to accomplish by noise, or by dashing his ink about him, like the Cuttlefish, when closely pursued by an enemy, and makes his escape under the confusion, and obscurity, which he has spread around himself. 4thly. He is a man of *great experience* as an Accoucheur. He informs us, that he has delivered 658 women! And he declares, that neither the forceps, nor any kind of instrument, is ever necessary. When speaking of the Forceps, and Crotchets, he says they are "*enfants de l'imperitie, dont je démontrerai les dangers & l'inutilité.*" † And he also exclaims, "*LE TEMPS & LA NATURE, VOILA, VOILA LES GRANDS MAITRES DE L'ART!*"**

* Detection, p. 46. † Discours Prél. p. 25.

** Ibid, p. 20.

Deeming it unnecessary to urge the parallel any further, I shall now produce the opinion, he has given, concerning the Sigaultian Operation, or Section of the symphysis pubis, which you have so strongly recommended in conjunction with embryulcia. "Ce que j' ai dit de l' opération césarienne, je le dirai de l' opération sigaultienne, que je regarde comme aussi inutile, and comme *plus meurtrière*." Disc. Préliminaire. P. 30. "What I have said of the cesarean operation, I will also say of the sigaultian operation, that I consider it as equally unnecessary, and *more destructive*." Despairing of being able to please you, (since you have blamed me for translating my own, and your quotations; * and have also reflected upon me for not translating them,†) I have been induced to please myself *in giving the translation* of this *morceau*; by which means you, and even a less learned reader, will be enabled to comprehend it.

Lest the evidence, already adduced against your compound operation, should not be sufficient to eradicate from your mind every propensity to employ it, I will favour you with a strong expression of disapprobation, from the celebrated *Brambilla*, "Quin etiam, quod ma-

* Detection, p. 43. 48. 91. † Detection, p. 22.

gis mireris, surrexerunt IMPOSTORES, qui instrumentis a se inventis miseras parientes divexant, aut *novas operationes proponunt*: exemplo sit *sectio symphysis ossium pubis*. Conservo in schola chirurgica militari pelvim mulieris, qui post novam istiusmodi operationem *ex terribili suppuratione quinto decimo die miserrime decessit.*"

INSTRUM. CHIRURG. Introduct. p. 20.—

Although I have now demonstrated from the published doctrines of Dr. Osborn, which you declare you *have followed, and shall continue to follow in such cases of difficulty, arising from distortion of the pelvis as shall occur to you**, that your compound operation ought not to be performed in any case whatever, I cannot leave this interesting subject, without adducing your *ingenious attempt to justify your project as given in your Detection.*" "The Dr." you assert, "next furnishes me (p. 139.) with a case in point, for sanctioning the performance of my compound operation, in his abstract of Mr. Welchman's account of the division of the symphysis pubis; which was performed by him upon a woman, "from an opinion *that she had not the least chance of living without THE operation.*" From a belief of the impracticability of delivering in any other way, (unless indeed by the Cæsarean operation, *which this extract proves he deemed certainly fatal to the mother.*)" Page 81.

“ Stating the question very generally, I omitted to specify this case, or to *swell my pages by its recital*, but it is the one I alluded to in my essay.” Ibid. P. 82.

Of the remarks, which I judge it necessary to offer upon these *select* passages; the 1st is, that if you *really* were acquainted with *the particulars* of this interesting case, before you saw my abstract from it, I am astonished you did not bring it forward, for it is of more value than all the extracts, with which you have chosen to *swell* your former pamphlet: And the 2d is, that you have been playing one of your old tricks again, in this place, i. e. making a most egregious misrepresentation. Probably you could not avoid it, for as Horace justly observes, who was certainly well acquainted with the human heart,

Naturam expellas furcâ, tamen usque recurret.

EPIST. 10. LIB. 1.

“ For Nature, driven out with proud disdain,
All-powerful goddess, will return again.”

FRANCIS.

The passage in Mr. Welshman's paper stands thus, “ During this day and night,” (Sept. 3. 1782) “ my son frequently visited her with me, and, from every circumstance, we were both

fully convinced *that she had not the least chance of living without AN operation*" Lond. Med. Journ. V. XI. p. 48^l. And in my abstract (*Defence, &c.* p. 139) I have stated, that "Mr. Welchman, and his son, frequently visited her during this day and night, and were both of opinion, that she had not the least chance of living without AN operation." Nor is there, in the whole of the case, or abstract, any sentence that corresponds with the *pretended* quotation, given in your book, or that will justify you in your conclusion, that *Mr. Welchman deemed the cesarean operation certainly fatal to the mother.* Another striking instance of the fertility of your imagination!

When, in my *Defence, &c. &c.* I considered the evidence for and against the delivery of Queen Jane Seymour, by the Cesarean Operation, I cautiously avoided stating my own opinion upon the subject, because positive assertions may be adduced on both sides of the question, and I do not see sufficient grounds to form a decided opinion upon. I chose, however, to enter into it at some length, since I could support my cause by a *Dilemma*. For supposing the prince (Edward the 6th.) to have been brought into the world by this operation, I could adduce your own concession, that the Queen was "*safely de-*

livered, although she lived only TWELVE days after her delivery." *Reflections*, p. 4; And supposing that she was not delivered in this manner, I should thence be enabled to prove, that the testimony of *Mauriceau*, and *Dionis*, your two grand authorities against the Cesarean Operation, is exceptionable, since they both declare, that this operation was performed upon her. Being desirous of avoiding, as much as possible, a repetition of what I have before advanced, respecting the birth of Edward the 6th, I shall only remind you, that you have forgotten to mention the evidence, adduced from *Aikin's Biogr. Memoirs*, in favour of the operation being performed in this case, and that, besides an imperfect statement of the arguments, you have been guilty of drawing an erroneous conclusion, as you will find on turning once more to my *Defence*. P. 12—16.

With respect to the points at issue, betwixt us, concerning the doctrines, and practice of *Hippocrates*, I must deny that I have misrepresented you in any way, and must maintain the truth of every thing I have stated, till you are enabled to demonstrate, that ARE and WERE are of the same signification; that JUDICIOUS DIRECTIONS are such as ought NOT to be practiced; and that the passages, adduced by me, do not exist in the writings, attributed to *Hippocrates*. You

tell us (P. 17.) that in the quotation, which I have given from the book *de superfætatione*, "the direction given is *not to extract* by the feet, but in a footling or breech-case, after the whole body is delivered, (*by the powers of Nature*) and the head only remains in the passage "to introduce both hands previously moistened with water, between the os uteri and the head, and in that way to extract it." Pray, Sir, where did you meet with any thing like the expression, "by the powers of Nature"? It does not exist in the original passage, and I should be glad to know, whether you would wish it to be considered as *a comment of your own*, or *a literal translation of one of your own Detections*;* since you do not like to be accused of an *interpolation*. In the next page you say, my third extract "absolutely proves, that it was not Hippocrates's practice to give manual assistance, as the Dr. pretends; because breech and footling cases could not have proved so fatal, *if he had known how to manage them*." Permit me to inform you, Sir, that I never said Hippocrates knew how to manage them. I have proved that he has given directions, by producing them; but I never said that his di-

* Your *Detections* may generally, perhaps always, be referred to one of these heads, 1st. Detections of circumstances or matters, which do not exist. 2dly. Detections of circumstances or matters, which were not concealed.

rections were *judicious*: You have given directions for the performance of the Cesarean Operation, but when I read them, I by no means supposed that you knew how to perform it properly.* And a footling case, you ought to allow, is certainly a very dangerous one to the child, in hands no better acquainted with the management of it than Hippocrates was. In the preceding extract from your book is a quotation, from this author, containing directions for the extraction of the head of the child, when it comes with the feet foremost, and (in page 16) you have asserted, that "if the pelvis be well formed, little difficulty would occur till the head came to be delivered," it is no wonder, therefore, that Hippocrates was not more particular in giving directions for bringing down the lower extremities and trunk. You add (p. 20), it is "*fully proved*" by the Dr's. own quotations from Hippocrates, that there is no mention made by him

* As you have never either performed the Cesarean Operation yourself, or seen it performed, it will appear a little extraordinary to those, who are unacquainted with you, that you should undertake to give directions concerning it; more especially, as you have declared the operation to be *unjustifiable*. Do you really believe, that your plan would succeed as well as those, adopted by J. Nufer, *ὀρχήστωρ*, and the other operators, mentioned by Rousset, whom you affect to ridicule?

of *manual delivery* by the feet." It belongs, I believe, exclusively to yourself to invent, and use such phrases as this, and *logical suicide*, and *erysipelatous fluid*.

In discussing your assertions relative to the precepts, given by *Celsus*, it seems, according to your account, that I have done you injustice, by taking the following *general* expression, "when it was necessary to turn,*" in a *general sense*.—Pray, Sir, have not *you* found it necessary to turn† here? However this may be, being always disposed to accomodate you, I will, for the present, admit, that you did not mean by the above phrase, *whenever it was necessary to turn*, and will take your corrected statement, by which it appears, that you meant a third case described by *Celsus*, "and, that is, when the body *in transversum jacet*," in order to see what your ingenuity will

* As nothing occurs in the writings of *Celsus*, which at all corresponds with the expression, "When it was necessary to turn," I have very properly called it "an interpolation of your own" *Defence*, &c. p. 24. Perhaps you would rather have had it styled a *Comment* of your own; or a *literal translation* of "*in transversum jacet*," or of "*si forte aliter compositus est*."

† Strong symptoms of this propensity to *turn* also occur at p. 62 of your *Detection*, where you consider what you had before aserted, relative to the management of the external wound, after the *Cesarean Operation*.

effect. You chuse to proceed in the interrogative form, by first asking, "When the body of the child lies across (*in transversum jacet,*) and neither the upper, nor lower extremities present, if the hand be introduced, and the FEET be brought down, what is that but a *turning* case?"

Permit me to ask you a question, a good deal like your own: When the body of the child lies across (*in transversum jacet,*) and neither the upper, nor the lower extremities present, if the hand be introduced, and the HEAD be brought down, what is that but a turning case? And I will now shew you, *from the words of Celsus*, that the latter was his favourite practice, "*Medici vero propositum est, ut infantem manu dirigat vel in caput, vel ETIAM in pedes, si forte aliter compositus est.*" "It is the object of the physician, when the child is differently situated, to *direct* it with the hand, in such a manner, as to bring either the head, or EVEN the feet to present."

That it was the leading object with *Celsus*, to change the transverse into a head-presentation, is evident from *vel in caput* being placed first, and from the particle *etiam* being placed before *in pedes*. It seems, however, that you did not approve of the particle *ETIAM*, and therefore, *with your usual candour*, you have omitted it altogether, both in the original, and translation, given at page 23d of your *Detection*, "*Medici vero pro-*

positum est, ut infantem manu dirigat, vel in caput, vel in pedes, si *forte aliter compositus est.*”

“It is the object of the physician, should any other presentation occur, to bring down the head or feet.” You afterwards say, that I have assumed to myself the privilege of gross misrepresentation, and ask this question, “for, from my own words, as above transcribed, who could have supposed it possible that I should have been accused of saying, that Celsus directed the child to be turned, and brought by the feet, *when a hand presented?*” This is certainly *implied* in what you have said, and I have no doubt, but, if I had asserted what you have, you would have accused me of gross misrepresentation, and I should have deserved it. I must further intimate to you, that this accusation, and *gross misrepresentation*, which you talk so loudly of, prove to be only the following *interrogatory*, “Is it not necessary to turn the child, when a hand presents?” See Defence, &c. p. 24. In the same page of your Detection this strange question occurs. “Has Dr. Hull, in the course of his twenty years practice, in a very populous neighbourhood, never met with a case, in which, although the arm of the child presented, the feet were found near to the os internum, *on returning back the former to bring down the feet?*” My answer is, that I never did any thing so bad, *as to return back the arm to*

bring down the feet; and, as you appear to stand in need of information upon this important point, I will make you generally acquainted with my practice in arm-presentations. I do not attempt to return the arm for fear of breaking it, or injuring the mother, and because I know that it is neither necessary nor proper; for I find, that by introducing my hand along the child's arm, and bringing down its feet, the arm, in general, easily recedes, as the child is turned; and in those cases, where the arm does not recede, and the delivery cannot be easily accomplished, *after having brought down* one or both feet (either without the *os externum*, or so far that I can secure them by a ligature), whilst I pull at the feet with one hand, I elevate the thorax, or head of the child with the other; and when this practice, in consequence of monstrosity, or some other cause, proves ineffectual, I have recourse to *Embryotomia*, an operation which I shall describe in the latter part of this letter. Before I take my leave of your *choice Reflections* upon the writings of Hippocrates and Celsus, allow me to inform you, that you have erred even with respect to quantity, in saying of the former author, "His directions are *few*, but *judicious*, on the management of labours;" and of the latter, that "he is *more full* on the subject than his predecessor." See Pages 5 & 6.

This very extraordinary passage occurs at p. 34 of your Detection. " His conclusion is worthy of such premises, namely, that gastrotomy, or the section of the parites of the abdomen, is attended with less danger to the woman, than when hysterotomy, or the section of the womb is superadded to it. The Dr's. *legitimate* inference then, in this case, is, that the danger of the wound of the abdomen is lessened, by making another of equal size through the body of the womb !"— You have not referred to any part of my *Defence*, where they may be found, when you speak of this pretended *conclusion*, and *legitimate* inference. Nor can you find any thing in my book, which will justify you in making this *charitable* observation. I presume, you know that the separation of the placenta from the uterus, after a perfectly natural labour, is sometimes attended with very great danger ; and it is from the danger attending the detachment of the placenta, in extrauterine cases, from parts, which do not possess the contractile power of the uterus, and are very susceptible of inflammation, or from leaving it, adhering within the cavity of the abdomen, that I have been induced to consider true cases of gastrotomy, where such attachment of the secundines exists, as likely to be more frequently disastrous than cases of hysterotomy : But I have no where intimated, that the wound, made into

the uterus, in the latter species of Cesarean Operation is not dangerous ; much less that the danger of the wound of the abdominal parietes is lessened by it. Fortunately for myself, I can support this opinion, not only by good reasons, but also by an *Argumentum ad hominem*, furnished by your friend Dr. Clarke, who has given the annexed case, and observations, in the third Vol. of the Memoirs of the Med. Soc. " Some years ago my father was sent for to attend a woman, who, after the usual time of nine months, was seized with the pains of labour. She had passed through her pregnancy without any remarkable symptoms, which might lead to a knowledge of her situation, and was of the usual bulk of a woman at the full time. Upon examination, he found the os uteri very high up, and not in the smallest degree dilated, although there were alternate attacks, and remissions of pain ; he therefore considered they must be owing to some irritation, and, having ordered for her what he thought proper, left her. At this time the child could be felt through the parietes of the abdomen. He was not called to her again until after the space of eight days, during which time she had constantly been in pain ; the os uteri still continued in the same rigid state. This led him to make a more particular examination of the case than he had done before, when he could dis-

tinctly feel that the cervix was of the same length as in an unimpregnated uterus, and thought that he could distinguish the uterus not enlarged. Laying all these things together, he was persuaded that the child must be extrauterine. He was induced, from the importance of the case, to have a consultation, and accordingly sent for a Mr. Mansfield, a very eminent surgeon and man-midwife, at Thrapston, in Northamptonshire.—The woman being considerably exhausted by the long continuance of the pains, and the child being probably alive, it was determined to cut into the belly, as the only means of delivering the child, or preserving the mother. An incision was accordingly made into the abdomen, on the side where the child lay, just enough to extract it. Unfortunately the child was found dead. The child being taken away, the *placenta* was found *adhering generally to the kidneys, intestines, &c.* it was agreed, that it should be brought away, which was done. The woman, who had already lost much blood during the operation, *lost more on the delivery of the placenta, and, weakened by the discharge, she died in about four hours after the operation.*”

“ Indeed, it seems hardly possible, that, under these circumstances, a woman can recover, because, *if the placenta be brought away, she must*

almost inevitably fall a sacrifice to the consequent flooding; and, if the placenta be left behind, we are warranted by experience to expect that such a mass of dead matter remaining in the cavity of the abdomen can hardly fail to produce the worst effects."

P. 197 & 198.

I shall also beg leave to lay before you Mr. Turnbull's sentiments upon the most proper management of the placenta, when the Cesarean Operation is performed in extrauterine cases; who is decidedly of opinion, that it ought not to be removed at the time of the operation. He observes, that "The dread of a profuse hæmorrhagy following the separation of the placenta, from parts not capable of contracting, has intimidated those, who have met with extrauterine cases, from performing the operation." MEM. of the Med. Soc. p. 210.

"It may be argued against (for) extracting the after-birth, that the danger is by no means equal to the risk, which the women must be exposed to, if it is permitted to remain, and to detach itself, &c." "On the contrary, my firm opinion is, that the separation and expulsion of the placenta should always be left to Nature, *for the extraction will be generally fatal from the hæmorrhagy*

following it, besides the firm and extensive adhesion which it frequently forms with a part, or the whole of the visceral contents (as happened in the case of Mrs. Calvert, where it adhered universally to the abdomen, and almost every contained viscus,) would render its removal totally impracticable to the operator, and highly dangerous to the patient."* Ibid. P. 211.

"After having made a sufficient aperture, the child should be removed by slow and cautious means, afterwards dividing and tying the umbilical cord as in a natural labour, and leaving the maternal part of it hanging out of the wound, which may be daily pulled at, in a gentle manner, until the placenta shall be gradually separated, by

* "The placenta was so extremely delicate, and possessed so little of its natural characteristics, that, at first view, I conceived it to be a thin membranous substance, formed by an exudation from the surface of the bowels in consequence of inflammation, an effect that not uncommonly happens from that cause. This membrane, in which the vessels were exceedingly small (so as to render the tracing of them with the knife impracticable), did not exceed in thickness one tenth of an inch, was ruptured at that part where the child's head appeared, and sent off filaments, from its reflected portions, to the peritoneum, stomach, liver, intestines, mesentery, meso-colon, and to the abdominal parietes." TURNBULL. Mem. of the Med. Soc. p. 192.—The case of Mrs. Calvert, is illustrated by several Engravings from Drawings, made by Mr. Pole.

which means the external wound will be prevented from healing, until the time that the placenta, or every detached portion of it can be removed, and which also will afford an opportunity of using emollient and other injections, as relaxants, and to keep the cavity free from putrid, and other extraneous matter." Ibid. p. 212 & 213.

In my former letter to you, I merely stated my opinion, that it was the more eligible practice, to leave the placenta behind, when the Cesarean Operation is performed in extrauterine cases, I shall therefore, in this place, enter a little further into the consideration of this subject. The number of authentic cases, wherein Gastrotomy has been performed for the purpose of extracting a full-grown and perfect foetus, which had never been lodged in the uterus, is extremely small. One has occurred in this kingdom, which terminated unfortunately, It has been already mentioned, that in this case the child was dead, and that the placenta was extracted, and occasioned a hemorrhage,* which, to me at least, appears to have contributed materially to the fatality of the event. I know of no other case, which I dare bring forward as a genuine extrauterine case, wherein the Cesarean Operation has been performed: But from the two cases given by Mr. Clarke and

* See above p. 50.

Mr. Turnbull, and mentioned above, little doubt, I think, can remain, that the placenta ought not to be forcibly detached by the operator from the *viscus* or *viscera*, to which it is found adhering. Two questions, therefore, only arise. Are we to adopt the method, recommended by Mr. Turnbull? Or, are we to attempt to heal the wound by the first intention? The latter practice appears to me greatly preferable. For, in the first place, we are by no means certain, that a degree of circulation may not be supported in the placenta, sufficient to preserve the life of it, when it is attached to the abdominal contents in an extrauterine case. 2dly. If this should not be the case, and the placenta, becoming a dead mass, should be detached by a natural process, it may either be absorbed, without exciting inflammation, or ulceration of the cavity of the abdomen; or it may excite inflammation and abscess, or ulceration, by means of which an outlet may be formed, and its discharge effected, provided the patient be not destroyed by the previous inflammation. You have affected to ridicule the notion of the removal even of coagulated blood by absorption, in the following elegant observation, "for the Dr's. absorbents grow *so ravenous* after the Cæsarean section, as to eat up a pretty large clot of blood before any mischief can arise from its acting as an extraneous body." *Detection*, p.

8. And indeed it is very common for a man, who is fond of making a noise, when he can not bring forward an argument, to endeavour to overpower his adversary by ridicule. Ridicule, however, will not baffle the adversary, with whom you are now contending, you will find every stroke of this kind rebound upon yourself. You either do, *or ought to know*, that not only coagulated blood, but muscle, and even *bone* may and are removed by the absorbents; otherwise how does exfoliation take place? Or, how are all the soft parts of a fœtus removed, and nothing more than its bones discharged through openings, made by the ulcerative process into the Rectum, or through the abdominal parietes? And if, which you cannot deny, (I beg your pardon, Sir, you can, but you ought not to do it,) the soft parts of a fœtus can be thus removed by the absorbents, why may not a coagulum of blood, or the tender substance of the placenta, be taken up by the same vascular system.

You have expressed a very singular wish, at page 41st of your *Detection*, viz. "*My wish is to prevent the Accoucheurs of Manchester from being cruel.*"

Lest you should not know the true meaning of the word *cruel*, previously to my entering

upon the consideration of your wish, I must take the liberty to inform you, that it signifies *wanting compassion, or being pleased with giving unnecessary pain to others.* Your wish seems to *imply*, that the Accoucheurs in Manchester are of a cruel disposition, or, at least, that you are apprehensive, lest they should become cruel. It would have astonished me if any body, but yourself, had intimated any such injurious suspicion, respecting them.—Can you point out one, Sir, whose sympathy, and commiseration, are not excited, in a degree equal to your own, by the sufferings of a female, under the tormenting pains of labour?—Do you know *one*, who is not invariably induced, by the complaints of a parturient patient, to use his best efforts for the relief of the sufferer?—Finally, is there one *Accoucheur* in Manchester, either *less willing*, or *less able* than yourself, to afford the necessary assistance to a patient of this description?

With your usual degree of consistency you abuse me, in page 10th of your *Detection*, for bringing forward *circumstantial evidence* from Hume, to prove the cruelty &c. of King Henry the 8th; and, in page 68, you propose this striking question. “Has he never heard that in cases of MURDER, for example, circumstantial evidence

is often all the evidence that can be obtained, and that a verdict of guilty, against the criminal, is founded on a *chain of circumstances*, none of which taken *singly*, would amount to *moral proof*?"

I wish to observe upon this question, 1st, that the word MURDER,* would have been more *emphatical*, if written thus **Murder**; and 2dly, that I consider myself *nearly* as well qualified, as yourself, to judge of the value of circumstantial evidence. If the circumstances, in themselves, be of *some value*, a *chain* of them may amount to proof, and of course lead to conviction; but, *if they be not of any value* when taken singly, they are of *no value*, when taken collectively. (See Defence, p. 121.) Ten thousand cyphers do not amount to an unit. Nor will a *chain* of circumstances, of the latter description, ever amount to any thing like a proof, or ever produce conviction.

You give this piece of information in p. 66 of your *Detection*," I have the satisfaction to possess his (Dr. Osborn's) favourable opinion of my late publication†; which my reader will probably deem a sufficient answer to Dr. H's. charge of misrepresentation." And, in the preceding

* See also *Detection*, p. 96 & 97.

† Reflections, &c.

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page, you say, "I presume Dr. Osborn *can tell* whether I have misrepresented him or not; certain it is, that Dr. H. has either grossly misrepresented, or egregiously mistaken me." That Dr. Osborn has spoken favourably of your Reflections, I have not the least doubt; since you have merited this from him, by your attempt to support his sentiments; neither do I entertain any doubt that *he can tell* whether you have misrepresented him: But as you do not say *he has told* you so, permit me to *repeat*, that *you have most egregiously misrepresented him,** and to *tell* you, that *I have neither mistaken nor misrepresented your words*. If I have done any injustice to your expressions, why should you require every candid reader to understand you as meaning the space "from pubis to sacrum,"* when you have unequivocally mentioned "the widest part of the pelvis;" the latter expression, is certainly not more concise than the former.

The *general reader* ought to be obliged to you for your information, that HEISTER "was the author of the first complete system of surgery; and that, as a whole, it still remains the best system of surgery extant." *Detection*, p. 45.—I should wish to propose two questions to you upon this matter. Have you read the *Institutiones*

* See Defence of the Cesarean Operation, &c. 112.

Chirurgicæ of this author? Have you read the *Institutiones Chirurgiæ* of Platner, and the more recent Systems of Surgery, published in Great-Britain, France, and Germany? And, whatever your answer may be, I must take the liberty of observing to you, that I think you just as well qualified to speak upon the comparative value of Systems of Surgery, as you are to decide upon the estimation of *Leyden Degrees*, and *Æras in Midwifery*, which I shall consider by and by.

At the time, Heister published his *Institutiones*, it was the most valuable work extant upon Surgery. It is still entitled to a very respectable, though not the first place in a *Bibliotheca Chirurgica*, and on this account, as well as because you extol his system of surgery so much, it is that I shall bring forward his decisive testimony in favour of performing the Cesarean Operation to preserve the life of the mother, *even when the child is known to be dead.* “*Quando vero mater gravida adhuc viveret, & fœtus mortuus esset, nulla vero spes reliqua ipsum per vias naturales nasci aut educi posse, sicut verbi gratia fieri solet, quando indicia adessent fœtum vel in tuba Fallopiana, vel in ovario, vel in ipsius abdominis cavo hæerere, quemadmodum hujus generis exempla a variis observata sunt, vel forte in hernia quadam*

extra ventrem ; quale exemplum SENNERTUS & HILDANUS descripserunt, vel si *callus*, vel *scirrhus*, vel tumor, vel exostosis circa *os uteri*, vel in *vagina* adesset, qui exitum sive extractionem fœtus impossibilem redderet ; vel si *nimia partium naturalium* sive ob coalitum vaginæ non emendandum, sive ob callum, sive ob ossium pubis malam conformationem, ut in nanis præsertim mulieribus interdum contigit, *occurreret angustia*, ut fœtus propterea ex utero ejici non posset, prægnans vero ob dolores vehementissimos, qui sæpe adsunt, vel ob convulsiones, vel ob sanguinis vehemens profluvium, aliasue graves ob causas viribus exhauriretur, atque periculum mortis inde immineret, tunc sectionem hanc, licet veteres in vivis eam haud instituerint, & multi recentiores eam damnent, *omnino necessariam esse judico, ne et mater inde una cum fœtu pereat*. Nam profecto tunc extractio per vias naturales, quam MAURICEAU præ sectione cæsarea in quovis partu præter naturam commendat, hic non succedit. Igitur in omnibus ejusmodi casibus ; *ubi fœtum per vias ordinarias educere impossibile est*, (utpote de quibus hic potissimum sermo & quæstio est) durum quidem & anceps, sed unicum tamen remedium est, ventris gravidæ incisio, si matrem a fœtu hoc & morte mox imminente liberare volumus ; quemadmodum apud varios scriptores fide dignos fausta peractæ hujus sectionis

exempla leguntur : ita ut hoc sit sensibus & experientiæ obloqui, quando MAURICEAU scribit, hanc sectionem *semper* matri esse lethiferam, quamque etiam ob causam ab ipso LA MOTTE, reprehenditur, licet huic operationi non adeo fa-veat, aliisque in rebus peccet, atque in optimis quibusdam occasionibus eam rejiciat." Inst. Chir. P. II. Sect. V. Cap. CXIII. § 4.

"Verum quia casus haud raro occurrunt, quorum supra jam multos indicavi, ubi fœtum per consuetas vias extrahere impossibile est, & matri sæpe ob fœtum ventre contentum, gravissimum mortis periculum imminet, tunc sane barbarum & impium esse credo miseram mulierem, quæ nostrum auxilium anxie implorat, aut saltem eo maxime indiget, deserere; sed potius *extremis malis extrema esse judico opponenda remedia*. Nam profecto melius tunc est ex sententia quoque summorum Medicinæ parentum, HIPPOCRATIS scilicet & CELSI, *anceps experiri remedium quam nullum*, aut ægras in deploratissimo illo statu, sub maximis cruciatibus relinquere ac certæ morti devovere, ubi adhuc spes ægras servandi, ut exempla fausta docent, superest."—IBID, § 6. The importance of these extracts must be the apology for their length; and, in order to keep you in good humour, I will not translate them. Indeed I do not think it neces-

sary, as I apprehend, that you are in possession of an English translation.*

I have had occasion to consider the very singular *Assertions*, of Dr. Osborn, relative to the sensibiility of the *fætus in utero*, in my *Defence*, (P. 154—157.) and shall now adduce proofs of his inconsistencies and contradictions, when speaking of the Cesarean Operation and Embryulcia. He tells us, in the Preface to his Essays, when speaking of that degree of distortion, which is incompatible with the safety of both mother and child, “that the life of the child must of necessity be sacrificed to the preservation of the mother, or the mother herself, for the certain safety of her child, must be doomed to *inevitable destruction by the Cæsarean Opeartion, &c.*” P. 12.

* Since the 21st and 22d pages of this letter were printed, I have had an opportunity of *ascertaining*, that your assertion, concerning the *translation* of Mauriceau employed by you, *is not correct*. For, instead of being, as you state, “the *seventh edition of Mauriceau’s works, translated by Dr. Hugh Chamberlen,*” it is the *seventh edition of Chamberlen’s Translation, made from the first edition of Mauriceau’s work*. This is proved by the dates of the *Approbation* and *Privilege du Roy*, of which the former is dated March 15, 1668, and the latter June 10th, 1668, the year in which the 1st edition of the original was published. For, if you will take the trouble to examine the 5th or 6th editions of Mauriceau, you will find, that both the *Approbation* and *Privilege du Roy*, given in these, bear a much later date.

At p. 436 of his Essays, He says, "I have all through this Essay mentioned the *Cæsarean Operation* as certainly fatal, and the delivery by the crotchet as perfectly safe." And immediately adds, "I was not however to be informed, that the first" (the *Cæsarean Operation*) "had succeeded in one or two recent instances on the Continent, nor that the latter" (the Crotchet) "had proved fatal in a very few instances in this country." He also informs us, in the wonderful Case of Elizabeth Sherwood, whom he delivered with the Crotchet, that "Even the first part of the operation, which, in general, is sufficiently easy, was attended with considerable difficulty, and some danger." P. 245. The Dr. has also this very curious passage in his account of Sherwood's case, "After waiting a few minutes" (after the head was born) "a napkin was put round the neck of the child, and given to an assistant. I then introduced the crotchet, and (first opening the thorax) fixed it firmly in the sternum. By our united force, strongly exerted for about a quarter of an hour, first one shoulder was brought down and then the other; and lastly, after opening the abdomen, the whole body, (with the sternum and spine pressed close together), were extracted in the most putrid and almost dissolved state." Page 24. It will, I believe, puzzle most persons to conceive how an almost dissolved body should bear the united

force of two men strongly exerted upon it for about a quarter of an hour, without giving way. And can any unprejudiced person, after reading these discordant extracts, regard Dr. Osborn's authority, relative to the Cesarean Operation, and Embryulcia, as entitled to much respect, or attention?

The Dr. ends his Essays with this striking declaration, "I cannot conclude without observing that the opinions contained, and the practice recommended in the preceding Essays, have been constantly and publicly taught by me for twenty years; and I have the satisfaction of knowing, that Dr. Clarke, my present colleague in lectures (who, from the acuteness he possesses, the uncommon pains he has taken, and the experience he has already had, is well qualified to judge), perfectly agrees with me in these opinions, and I am persuaded, therefore, will continue to teach the same doctrine, and recommend the same practice, so long as our school remains, or he continues to read lectures on midwifery." And he is so extremely indignant with his late Colleague, Dr. Denman, for having in consequence of further experience, and much deliberation on the subjects, recommended the use of the *Vectis*, and the employment of the Cesarean Operation, that we do not need to be surprized, if we find Dr. Clarke speaking rather obscurely and equivo-

cally upon the Cesarean Section, lest he should be treated in the same harsh manner by his Colleague, as Dr. Denman and Professor Hamilton have already been.

After these preliminary observations, respecting Dr. Clarke, we will, if you please, proceed to examine the extract from his 2d letter, dated March 9th, which is given in pages 85, and 86, of your Detection. "In my opinion, the Cesarean Operation ought not to be performed, in any case of deformity of the pelvis, on account of the deformity alone, *especially when it has arisen from rickets, in any dimensions of the pelvis, which admit of extracting the head by the crotchet, &c.*" There is no intimation, in any part of this extract, that the Cesarean Operation is either inevitably *fatal*, or *unjustifiable*; there is, if I understand it, even a *tacit acknowledgment*; 1st, that the dimensions of the pelvis are, by other causes (if not by Rickets), sometimes so much diminished, as not to allow the head to be extracted by the crotchet; 2dly, that the operation is thence rendered necessary in these cases; and, 3dly, that it is also necessary in other cases, but not simply on account of the deformity of the pelvis.

I have *never* asserted, that the Cesarean Ope-

ration ought to be preferred to the Crotchets, where the latter can be used with safety to the mother; although you seem to intimate, that I have, by this curious observation: "When I read his extracts intended to prove, that the Cæsarean operation should be performed without delay, and even in cases where *instruments*, to a moral certainty, may be used with success, &c." *Detection*, p. 3. If by *instruments* you mean the Crotchets and Perforator, I call upon you to point out the passage, which you have neglected to produce.

In page 59 of your *Detection*, you say, "In a cause, in which humanity is so deeply interested, it will be a sufficient consolation to me to have *an unit* against me." This, I can easily believe, for it appears to be a sufficient consolation to you, to have *an unit* for you. Since I do not know any *Author*, or *Practitioner*, in this Kingdom, who entertains the same notions, relative to the Cæsarean Operation as yourself, except Dr. Osborn.

When I wrote my *Defence of the Cæsarean Operation*, I was induced, on account of the importance of the subject, to enter into an ample discussion of the propriety of it, and to demonstrate, 1st, that cases *do occur*, in which it is im-

possible to effect the delivery of the patient, without having recourse to the operation; and, 2dly, that the operation has been very frequently successfully performed in France, and other nations on the European Continent, and that in England *one parent, and several children, have been preserved by it.*

One very interesting case, in which the Cesa-rean Operation was performed successfully in France, under very deplorable circumstances, is related by you (*Detection*, P. 30—33.), from some translation, I suppose, of the *Observations de Chirurgie*, par H. F. Le Dran. The subject of it was attacked with a *flooding*, according to your account,* on the 22d of April, 1726; and

* But, in the original, it is stated, that the waters burst on the 22d of April, and that on the 23d a violent flooding came on. “Catherine Trou femme de Michel Lamy Vigner-on, âgée de 43 ans, & de petite stature, avoit eu plusieurs couches fâcheuses. Etant grosse de son treizième enfant, & se croyant prête d’accoucher le 22 Avril, elle sentit que les eaux perçoient, & le 23 il lui prit une perte de sang très violente. &c.” Tome 2. P. 247. Hence you see the danger of either translating for yourself, or using such translations as happen to be within your reach (even though they be made from the *seventh* edition of the original). The surest way to avoid errors, of this kind, in future, will be to have nothing at all to do with either the original writings, or translations, of Greek, Latin, Italian, German, or French,

had an excessive loss of blood on the day following. Pains, like those of labour, came on, continued four or five days, and ended by a very fetid and copious diarrhæa, "*all things appearing at the same time disposed for the birth of the child.*" The fever, which supervened, was very considerable, and weakened the patient very much. On the 13th of May, "the husband, changing the linen, found the placenta hard, dried,† and very fetid," according to your account. On the 16th of May, M. Metivier, who communicated the case to Le Dran, "found a tumour situated upon the *linea alba*, a fingers breadth below the navel: it was black, and the *gangrene* extended three fingers breadth circularly, and had discharged abundance of serosity;" he cut off all that was gangrened with his scissars, and extracted a putrid child at the wound. The discharge was very acrimonious, and passed through the aperture in the abdomen, and by the vagina. The woman recovered, and enjoyed a good state of

Authors. It seems as if they had *actually* entered into a conspiracy against you, and were determined to mislead you, make you appear ridiculous, and humble you. You may, however, safely set them all at defiance, as far as *humiliation* is concerned.

† I have another error to notice here *in the original*; it is said that the placenta was half-dried." Le 13 May au matin le mari changeant les linges, trouva le Placenta ou Arrierefaix sorti, à moitié desseché & fort puant." Ibid. p. 249.

health afterwards. M. Metivier adds, "Whether it was formed and nourished in the *Tuba Fallopiana*, or whether it had made a passage through the uterus is what I do not pretend to explain."

Upon this case, which you, I presume, consider as both genuine and authentic, I shall offer a few remarks. 1st. The Discharge of the Waters, the Menorrhagia, the Labour-pains, and the expulsion of the placenta, before there was any aperture in the Abdominal parietes, taken collectively, furnish the most satisfactory evidence, that the fœtus, in the beginning of the labour, was contained in the Uterus. 2dly. No doubt can, I think, be entertained by any unprejudiced person, who will read the case with attention, that the fœtus afterwards passed into the cavity of the abdomen, in consequence of a rupture of the uterus. 3dly. This poor woman suffered successively under a *flooding*, a *rupture of the uterus*, a *diarrhœa*, a *fever*, and a *mortification of the belly*; and, when labouring under this last mentioned dreadful malady, the Cesarean Operation was performed upon her successfully, and she perfectly recovered her health. 4thly. You have brought forward this case, "to shew that Nature is competent to the making of extraordinary efforts." *Detection*, p. 30. Pray, Sir, do you call the *flooding*, the *rupture of the uterus*,

the *fever*, and the *gangrene*, which occurred here, *efforts of Nature*? If these be, according to your notions, *efforts of Nature*, I am afraid, you are unable to distinguish betwixt the *efforts*, and the *sufferings* of Nature. “*Quid natura faciat,*” and “*Quid natura ferat,*” appear to be of the same signification in your eyes. 4thly. With very great reason may the following complaint be applied to you, and all those *great masters* of Surgery, who hold forth the same sentiments upon the Cesarean Operation; “*Il semble donc vrai, que nature ait grandement à se plaindre de sa servante Chirurgie, & des grands maitres, qui la tiennent en tutelle, veu que leur monstrant à l’œil, & au doigt tant d’exemples en cet endroit pour secourir le genre humain (dont ils font profession), & les poussant par force comme par l’espaule à ce faire surement, & avec si heureux succès, ils n’en veulent toutefois, ou n’en osent approcher.*”—
ROUSSET. *Traité nouveau de l’HISTEROTOMOTOKIE.*

The case, which occurred to Mr. Barlow, has been adduced by me as a proof, that the Cesarean Operation has been performed once with success, in England, as far as relates to the preservation of the mother; and, in my Synoptical Tables, you will find that eight children have been

preserved by it in Great-Britain, none of which could otherwise have been born alive. Whether the child, in the case of Jane Foster, was extracted through a wound of the Uterus, or thro' a wound of the Abdominal parietes only, the mother was, upon either supposition, delivered by the Cesarean Operation; as I shall shew hereafter, when I come to defend the Operation *on the ground of authorities*. I have given my reasons, in my *Defence*, P. 72—74, for considering the case of Jane Foster, as a case of *Gastrotomy*: But Mr. Barlow, who was the operator, persists in affirming, that it was a true case of *Hysterotomy*, as related by himself, in the *Medical Records and Researches*, P. 154—162. And I shall now lay before you a further account of the case, in an extract from a letter, which I have just received from him, premising, in justice to him, that he lived with me nearly five years, and that I never had any reason to doubt his fidelity, during the whole of that period.

“ After making an incision, about five inches and a half in length, in a *longitudinal* direction, and a little to the left side of the *Linea Alba*, the *Peritonæum* and *Uterus* were divided with the knife, and the foetus extracted *through the incision*, made into that *viscus*. The Uterus was very thin, but possessed its contractile power so com-

pletely, that the edges of the wound, made therein, receded from the knife very quickly. As an incontrovertible proof of the case being *truly uterine*, the *Liquor Amnii* was discharged through the *vagina*, and the *Lochia* passed the same way, immediately after the operation.— Had the Uterus been ruptured, it is most probable, that a discharge of blood would have taken place *per vias naturales*, previously to the operation, or an effusion of blood would have been made into the abdominal cavity, and that the affection of the system would have presented more alarming symptoms than were observable. Were we to give credit to every little vague report, which women are too apt to believe, during the progress of labour, (particularly if it favour the marvellous), we might often be misled. And, if either of the Messrs. Hawarden supposed the uterus to have been ruptured, why did they not mention their suspicion of this accident, before the operation? If the patient had expressed herself to that effect (which, I believe, she never did), I think we should have been led to make a very particular examination of the Abdominal Parietes, which, to my knowledge, none of us ever attempted. I affirm, that Mr. Hawarden was too much agitated to be capable of attending perfectly to the steps of the operation, and that, when I mentioned to him (before we

left the patient's room) that I was surprized at the *thinness of the uterus, and its complete contractility* after such a protracted labour, Mr. H. made no reply but afterwards misrepresented the case, and, amongst other circumstances, erroneously stated to you, and others, that the external incision was made in a transverse direction.*"

" I should suppose, you will scarcely think it necessary, in order to substantiate the fact, relative to the thinness of the uterus, that I should produce a case, where the uterine parietes were exactly the same as in the case of Jane Foster. And I can refer you to various authors, who have found, upon opening that viscus, a material difference in its thickness. I see, therefore, no reason to call in question the genuineness of this case, upon so slight grounds, as the difference of a line or two in the thickness of the parietes of the uterus. In the *Select Cases in Midwifery*, published by Dr. Jas. Hamilton, of Edinburgh, we find the following particulars, stated to have occurred, in the Twin case of Mrs. Tweedale :
 " When she lay on her left side, the head of a child was felt so distinctly a little to aside, and

* Mr. Hawarden informed me, in one of his letters, that " he (Mr. Barlow) made a *transverse* incision in the left side, beginning a little below the navel, and tending obliquely towards the back part of the Os Ilium, about six inches in length."

above the umbilicus, that the sutures could be clearly traced." P. 125. "From the prodigious distension of the uterus its parietes, in some places, were probably as thin as a sheet of paper."

P. 133.—CHAPMAN relates the case of a woman, who died in labour, and where, having obtained leave to examine the uterus, he found that *viscus*, contrary to the opinion of some Accoucheurs, very thin. See Page 147—152.—Two more cases are mentioned, in his work, illustrative of the same fact. See P. 146—170. MAURICEAU in his *Diseases of Women in Child-bed*, translated by Chamberlen, Chap. 4th, mentions the same circumstance from his own knowledge, and brings forwards other testimony, in favour of what he has advanced, for example, *Galen, Car. Stephanus, Vesalius, &c. &c.* The same author (p. 240) in treating of the Cesarean Section, cautions the operator to be "careful not to thrust his instrument at once too far in, thinking to find the womb a finger or two thick, as all authors affirm, contrary to truth; in which he would be deceived as those are, who never well consider'd it: for it is very certain, that, at the time of labour, whilst it contains the child and waters in it, it is not above a single line thick, or the thickness of a Half-Crown; although they have all sang to us, that by Divine Providence, and a miracle, the more 'tis extended

with the child, the thicker it grows, which is absolutely false." The late DR. ROSS, Physician at Hamburgh, speaking of a case (See Duncan's Annals of Medicine for the year 1798, P. 306), which occurred to him, says, " I now opened the Uterus, which was not thicker than the eighth part of an inch, and tore as easily as a sheet of writing paper, &c." Lest you should be inclined to doubt the testimony of some of the above authors, I will introduce what is said of the Anatomical knowledge of VESALIUS in Hutchinson's Biographia Medica. " He (Vesalius) has ever, been considered, as the restorer of Anatomy in which he was indeed profoundly skilled.—THUANUS relates a singular proof he gave of his exact knowledge of the human body, whilst he was at Paris; where, with his eyes bound, he undertook to mention any the least bone, that should be put into his hands, defying them to impose upon him, and he did actually perform what he undertook. Page 475."

" The above quotations will, I think, appear to those, who view the subject with impartiality, to be equally well founded with any *opinions*, which have been brought forwards, in opposition to the statement, I have given of Jane Foster's case; I

shall, therefore, be glad to see them appear in your Letter."

Signed, JAS. BARLOW.

Had it been my intention merely to refute what you have advanced, upon the impropriety of having recourse to the Cesarean Operation, in any case whatever, I could have done this in a few pages: But, anxious to investigate a truth, of great importance, and to establish the necessity of this operation against every objection, that has been, or may be, adduced by persons, much better informed upon the subject than yourself, I was induced to bring forward some facts and opinions, that by you are considered, as militating against the operation. This very fair manner of meeting the question you are pleased to name *logical suicide*; a crime that you will not, I believe, be guilty of *intentionally*.

Finding you very fond of adducing *strong expressions* against the Cesarean Operation, and that, whilst I was indulging you with a delicious *morçeau*, I could prove Marchant guilty of a deviation from truth, with respect to the character of Rousset, I was led to favour you with his Epigram (See my *Defence*, p. 43); and I must beg leave to repeat it here, with *your adumbration* affixed to it.

" PRO REGIO PARISIENSII CHIRURGICORUM
COLLEGIO."

" Ordinis es cujus, rogo dic Rossete, vel artis
Si medicorum (inquis) te suus ordo rogat ;
Nec tu donatus lauro, tituloque medentum,
Et furtim exerces, quod titulo ipse nequis :
Sed tu dum scindis miseras per frustra parentes,
Artis eris cujus, dic rogo, *carnificis.*"

MARCHANT.

" Say, are you surgeon, quack, or doctor bred ?
For sure one trade's enough for such a head—
Nor Scotch, nor English schools gave your degree;
Cheaply dubb'd doctor by Dutch courtesy.
But while you slaughter many a pregnant dame,
You quit the doctor's for the butcher's name."

W. SIMMONS.

You are pleased to say, (*Detection*, p. 35) that the above is not meant "for a literal translation, but merely as an *easy compliment*, resembling the original, or (to shew the Dr. that I am acquainted with a learned word, an *adumbration* of it,) which may be applied to any Cæsarean operator, who not having the means of procuring a *really honourable degree*, from Edinburgh, or the English Universities, has been obliged to have recourse to Leyden for a Passport." As I was never present at the examination of a Candidate for a Medical Degree, at Edinburgh, it is not in my power to state, from my own observation, whether the examinations are more or less strict there

than at Leyden: But, from conversation with several Edinburgh Graduates, I am led to believe, that there is little or no difference in this respect. And I am disposed to consider every degree, conferred after such fair and full examinations, conducted *in the latin language*, as are made at Leyden, Edinburgh, or Glasgow, as *really honourable degrees* (however much they may be reflected upon by those, who are not qualified to judge of them). It is not uncommon for persons, of a similar disposition with yourself, *to affect to despise what they are unable to attain*, and your attack upon a Leyden Degree reminds me forcibly of *the Cur barking at the Moon*. I suppose you meant your *easy compliment* for Drs. PERCIVAL, BARDSLEY, and HOLME,* as well as myself, since we have all had the honour to receive our Diplomas at Leyden.

I have frequently heard it asserted, that Mickle's Translation of the *Lusiad* of CAMOENS is superior, even in spirit, to the Original, but have always suspected, that this opinion has arisen either from partiality for one of our own poets,

* I cannot avoid observing in this place, that, since you have, without provocation, cast unfounded reflections, and in the most public manner, upon the medical degrees of these gentlemen, you ought to make an equally public apology to *them* for your conduct

or from an insufficient knowledge of the Portuguese language. However this may be, I think little doubt can be entertained, that your *adumbration* of Marchant's Epigram is greatly superior to the original, and I will therefore consider it more particularly.

" Say, are you *surgeon, quack, or doctor* bred?"

That I am a Doctor of Physic, you have acknowledged; consequently it will not be necessary to enter much further into the consideration of this part of the question. I think it, however, material to state, that you and I were fellow-students,* and that we attended, at the same time, Dr. Fordyce's Lectures on the Practice of Physic, &c. &c.; and also to adduce the following Testimonial, in proof of my having been a Pupil of the Physicians to St. Thomas's Hospital. It is inserted in the 77th Vol. of the Philosophical Transactions, along with a Case of numerous Births, which occurred to me several years ago.

" Copy of a Letter from DR. BLANE, Physician to his Majesty's Navy, and to St. Thomas's Hospital, F. R. S. to Dr. Garthshore, Physician to the British Lying-in-Hospital.

* See Detection, p. 4.

Sackville-Street, June 22, 1786.

DEAR SIR,

A few days ago, I received from the country, an account of a woman, who was delivered of five children at a birth in April last. As your extensive experience and reading in this line of practice enable you to judge, how far the fact is rare or interesting, I submit it to you, whether it deserves to be communicated to the Royal Society. MR. HULL, the gentleman who sent me the case, is a very sensible and ingenious practitioner of physic at Blackburn, in Lancashire. He attended the labour himself from beginning to end, and his character for fidelity and accuracy is well known to me, as he was formerly a pupil at the hospital to which I am physician, so that no fact can be better authenticated. He mentions also, that he has preserved all those five children in spirits; and, if desired, he will send them for the inspection of the Society.*

I am, with great regard, &c.

GILBERT BLANE.

* They were accordingly sent; and having been exhibited to the Society when the paper was read, are now deposited in the Museum of Mr. JOHN HUNTER."

As a Surgeon, I am, *at least*, equally as regularly bred as yourself, and I have the best Diploma, which is granted in England, namely, the grand Diploma of the Corporation of Surgeons of London.

A *Quack*, according to Dr. Johnson, is "*a vain boastful pretender to Physic; one who proclaims his own medical abilities in public places.*" DICT. If you find this character more applicable to me than yourself, you are at perfect liberty to declare it.

"For sure one trade's enough for such a head—"

I shall dismiss this line with a single observation—One *tongue* appears to be enough for your head—the vulgar one!

"Nor Scotch, nor English schools gave your degree,
Cheaply dubb'd doctor by Dutch courtesy."

The greatest part of what I have to remark, upon these lines, has been anticipated at p. 77. & 78. I shall, therefore, in this place, content myself with desiring you to furnish the world with the *expence*, attending a graduation at Leyden.

"But while you *slaughter* many a pregnant dame,
You quit the doctor's for the *butcher's* name."

In these, which are the concluding lines, there is not the slightest appearance of *invective*, or

boorish vulgarity. Your *adumbration* is more easy and elegant, more polite and complimentary, even than the original. "You slaughter" is far preferable to "*per frusta scindis*," you cut in pieces. And the term "*carnifex*" which signifies a *Hangman*, or an *Executioner*, you have rendered much less harsh, and more harmonious, by translating it "butcher," a term, it would seem, singularly applicable, in your opinion, to a regular surgeon, or an accoucheur.

I was a good deal surprized to find, that, notwithstanding all the noise you have made, relative to the degree of sensibility, possessed by a *fætus in utero*, you have not ventured to support Dr. Osborn's *assertions*.

Nor was I less surprized to discover, that you had not a single new observation, of any kind, to offer, respecting the signs of a dead or living child, whilst it remains *in utero*. I was pleased, however, with reading the extracts upon this subject, from Dr. Denman's Introduction to Midwifery, given in your pamphlet; and shall take this opportunity of remarking, in general terms, that if you will adopt the precepts of your old master Dr. Denman (whom you do not seem disposed to acknowledge), in preference to those

of Dr. Osborn, you will not be a worse accoucheur.

The principal merit of YOUR* *Detection* consists in misrepresenting my arguments, or stating only a part of them, and then attempting to refute your own statement. I shall only examine one example of this kind, in addition to those given above, and must beg leave to pass over unnoticed many others, which I am not inclined to consider particularly.

The 60th page furnishes the following passage. "As the Dr. grounds the propriety of his practice on exceptions to the general course of experience, there must be something uncommon in

* I have every where named it YOUR *Detection*; but I find that many of my friends, who have read it, are of opinion that it is not *genuine*, i. e. that *your Detection* is not the production of the man, whose name it bears. Some of them have intimated to me, that they consider the quotations from *Sterne*, and even the *Adumbration* of Marchant's Epigram, as furnished by *another hand*. Surely you would not attempt to immortalize your own name, by arrogating to yourself the *inimitable* performance of another person. However this may be, I thought it right to intimate it to you, in order to give you an opportunity of asserting your claim to the *whole* of the work, or of acknowledging the contrary by remaining silent.

all his cases ; but, in the present instance, *he outdoes his usual outdoings*, for, without troubling himself to learn the particular circumstances, or the result of Professor Sandiforth's case, *he introduces it to strengthen his opinion* in favour of the operation. There are men in this country, to say the least of them, as eminent in their profession, as Professor Sandiforth, or any other Professor upon earth ; *yet it has ever been unanimously agreed* that the Cæsarean Operation should never be performed, when the delivery can be accomplished by other means. The patient being alive next day, only proves that she did not die immediately, (if the case terminated unsuccessfully ;) for as well might it be said, that the late Mr. Mellish did not die of the pistol shot in his forehead, because he lived many days after the perpetration of the crime. But I hope the Dr. will receive some papers from Leyden, as well as from Germany, and give their contents in his future elaborate performance."

Upon this extract I have to remark ; 1st. that I do not ground the propriety of my practice on exceptions to the general rule ; 2dly. that the case of Cæsarean Operation, which occurred to Professor Sandiforth, is adduced *for the particular purpose* of proving, that this operation is not dis-

continued in Holland*, in consequence of the following observation, given in the 33d. page of your former pamphlet, "And in Holland, it" (the Cesarean Operation) "was performed by the celebrated Campert†, but one fatal case was sufficient to satisfy him;" hence, all your admirable reasoning upon the above case, and your illustration of it by a select anecdote, are totally irrelevant; 3dly, that, notwithstanding your decisive tone, I cannot admit your capability of determining upon the degree of eminence, which foreign Professors have attained; and with respect to Prof. Sandifort, in particular, I much doubt whether you are acquainted with the *Titles* even of one half of his works; and, 4thly, I shall prove, hereafter, that men of great eminence, upon the Continent of Europe, have maintained, and do still maintain, *that the Cesarean Section ought to be preferred to the Crotchet*, whenever the child is known to be alive.

Before I conclude this part of my letter, I think it necessary to state, that I have neither practised, nor recommended, the Cesarean Operation, in any case, where the delivery can be

* See my Defence p. 97—99.

† Amongst many other things, which you have neglected to attend to, you have forgotten to inform me, where this opinion of Camper is to be found, and to answer some important queries, proposed in p. 125 of my *Defence*.

accomplished by other means, with more safety to the mother, or equal safety to the infant.— When the two deplorable cases, in which I have performed it, occurred, I was perfectly acquainted with the published opinions of Dr. Osborn, relative to the Cesarean Section, and Embryulcia, &c. : but I never thought *them* entitled to much attention; and I knew no other British Author, or Practitioner, who entertained the same notions, relative to the former operation. In a case of extreme difficulty, and danger, it is not, I apprehend, a *single voice*, however loudly exerted, but the *majority* of respectable British Authors, which is to be the guide of a British Practitioner.* And the practice, adopted by my-

* The following account of a recent decision of the Medical Society of Paris, on the propriety of performing the Cesarean Operation, is given in the Medical and Physical Journal for June 1799.

“The Medical Society of Paris, after having heard the Memoir of Citizen *Baudelocque*, on the Cæsarean Section, read twice, together with the interesting discussion it has produced; and considering

1st. That it is proved by experience, that there are cases, in which delivery is impossible by natural means;

2. That, in a number of cases, the Cæsarean Operation is the only means, which affords any hope of saving the life of the child; and

3. That this operation, serious as it is, has been *often* practised with complete success—

self, and the gentlemen who were concerned with me, is sanctioned by the concurrent testimony of all our latest and best systematic writers on Surgery, and Midwifery; by SMELLIE, JOHNSON, HAMILTON, DENMAN, BELL, &c. &c.

“Are unanimously of opinion, that it is the *duty* of the practitioner to have recourse to the Cæsarean Operation, in those cases, where his professional skill deems it proper: and, in order to enable men of science, as well as the public, to judge of an operation, so interesting to humanity, social order, and the progress of the heart, the society decrees, that Citizen Baudelocque’s memoir, containing his inquiries, and reflections relative to this subject, shall be printed, and distributed among the different Administrative and Judicial Bodies”—
Page 391.

END OF THE FIRST PART.

CORRECTIONS.

Page. Line.

- 14 — 5. *For domitis. Romana read domitis Romana.*
42 — 16. *For inter polation read interpolation.*
44 — 8. *For aserted read asserted.*
53 — 1. *Insert the 1st. line of page 54.*
62 — 5. *For sensibiility read sensibility.*
— 16. *For Opeartion read Operation.*
68 — 27. *For here in the original ; read here; in the original.*

N. B. In the first letter P. 227. L. 5. *for years read hours.*

OBSERVATIONS

ON

MR. SIMMONS'S "*DETECTION, &c. &c.*"

PART SECOND.

“ *EN* litem magnæ aleæ !——Faxint superi !
ut per contentionem meam lucri aliquid & arti
nostræ & publico commodo, quæ me spes valde
tenet, apponatur ; ut artis procures agantur in
majorem hujus rei curam ; ut discussis omnibus du-
bitationibus coalescant tandem medicorum de hac re
animi & opiniones, certamque dein normam, quam
quisque obstetricator teneat, constituendi facultas
fiat.”—WEIDMANN.



A

SECOND LETTER

to

MR. WILLIAM SIMMONS.

PART II.

Dr. Wm. Hunter, in his *Reflections, relative to the Operation of Cutting the Symphysis of the Ossa Pubis*, has, with very great propriety, observed that "it is time only and a variety of experience, that can finally decide upon the utility of a new practice. When once it is fairly started before the public, though it may meet with unreasonable opposition, if it can bear the test of general experience, it can hardly lose its ground; it may be kept down for a time; but must prevail in the end. So it has happened to the Peruvian Bark, Inoculation, and many other improvements."

“ On the contrary, with whatever approbation a new proposal of this kind be received, and however encouraging the prospect may be, at setting out, or even after some trials; if it cannot bear the test of general experience, it must fall into disrepute; as it has actually happened to the Hypogastric Section for the Stone in the bladder, and to a thousand pretended improvements in physic and surgery.”

The above observations are most strikingly confirmed by the Section of the Symphysis Pubis and the Cesarean Operation, as will appear from the following short view of their origin, progress, and fate.

No discovery in the healing art was ever announced with so much eclat as the former of these operations. It was proposed by M. Sigault,* in the year 1768, to the Royal Academy

* Some obscure hints, relative to the performance of this operation, are to be found in the earlier writers, but this ought not to detract from M. Sigault's claim to the invention. “ Non improbabilis itaque est eorum opinio, qui inventum Synchronotomiae pro recentissimo nostri ævi lucubrationum fructu, salutare negant, eandemque operationem jam ante aliquot secula cognitam declarant.” Michell de Synchronotomiae Pubis Com. p. 9.—See Baudelocque, T. II. p. 462.

of Surgery at Paris: But the report of M. Ruffel, who was appointed to inquire into the merits of the operation, being unfavourable, it did not obtain the countenance or sanction of that respectable body. Notwithstanding this discouragement to his project, M. Sigault determined to put it in execution, as soon as a favourable opportunity should occur. And it was first practised by this physician, with the assistance of M. Le Roy, in Paris, on the 1st of October 1777, upon the wife of a soldier, named Souchet, who out of four children had not been able to bring one into the world alive. Although the *urethra* was wounded in the operation, the *vesica urinaria* materially injured, and the poor woman's life greatly endangered, the Faculty of Medicine at Paris, on the report of *Gravclaus* and *Descemet*, (two of their members, who had been deputed to attend to the case) and a view of the woman, without waiting for further experience, immediately caused a medal* to be struck in

* Upon the medal was this inscription,

A. 1768. SECTIONEM SYMPHYSEOS OSSIUM
PUBIS INVENIT, PROPOSUIT.

A. 1777.

FECIT FELICITER

M. SIGAULT, D. M. P.

JUVIT M. ALPHONSUS LE ROY, D. M. P.

honour of the inventor; and the French Government rewarded both the operator and his patient with a pension. The expectations, entertained from this new mode of delivery, were at first extremely, and indeed unreasonably high: It was supposed to be capable of superseding not only the Cesarean Operation and the crochet, but even the use of the forceps, and every obstetrical instrument whatever. Being thus extravagantly recommended by a respectable body of practitioners, the Section of the Symphysis Pubis was very eagerly adopted by the accoucheurs of different nations; insomuch that, within the first eight years, more than thirty instances of the employment of it became recorded. It was soon found, however, not to merit the high encomiums bestowed upon it. *Every operation was found to have its victim*; although it was several times performed upon women, whose pelves were either not at all, or very slightly deformed; and who, either before or after the operation, were delivered without any extraordinary assistance; a convincing proof that the operation had been, in these cases at least, unnecessarily resorted to. By thirty-two operations, twenty women and thirteen children* only were preserved:

* Baudelocque L'Art des Accouchemens. T. II. p. 558.

the Operation.

14	1779.	M. Van Damme of	— Bramier, at	It is believed that the pelvis	The child was much injured by the for-	is thought it could not have been saved, that it had been alive. The symphysis was in part divided by a saw. The urethra sloughed. The wound healed in 18 months. She had born seven children: The last of which was brought away piecemeal.
25	1685.	The same.	The same.		The child preserved. The mother recovered very speedily.	
26	1786.	M. Verdier Duclos.	At Ferté-Bernard.	Stated to be only 13.4. inch.	The child died as soon as it was born. The ossa pubis are said to have separated about 2.1. inches.	
27		M. Löffler of St. Petersburg.			It is not stated by Richter (Bib. 12. p. 364) whether the child was born alive. The mother was well in a month afterwards.	
28		M. Desmarests.			No mention is made of the child. The woman escaped with her life, but suffered much from an exfoliation of the bones of the pubis, and other accidents.	
29		A Surgeon in Prussia.			No mention is made of the fetus. The woman survived the operation, but suffered from gangrene, and from exfoliation of the ossa pubis.	
30		M. Der.			The child preserved. The only account I have seen of the three last cases is in Michell's Comm. de Synch. Pub. p. 40. 41. 139 &c.	

(These Tables to be placed betwixt pages 94 and 95.)

Cases of the Section of the Symphysis Pubis, in which the Mothers survived the Operation.						
Case.	Year.	Names of the Operators.	Names of the Patients.	Short diameter of the fetal head.	Distance from the symphysis pubis to sacrum &c.	Event of the operation, with respect to the child; and other observations.
1	1777	M. Sigault.	—Souhot, at Paris.	3 $\frac{1}{4}$ inches	2 $\frac{1}{2}$ inches, and three inches a little diagonally.—The pelvis well formed below.	The child was born alive, and appeared immature like a fetus at eight months. The mother recovered, but the urethra and bladder were injured, and she had an incontinence of urine, for a considerable time afterwards.
2	1778	The same.	—Blandin.		About three inches.	The child was dead. The mother recovered. M. Sigault proposed to deliver this woman in her next labour by the same operation, but the woman would not submit: And M. Bellami, a midwife, delivered her of a healthy child, Oct. 7 1799.
3		The same.	—Verdierais.		The pelvis said to be distorted from before to behind, especially on the left side.	The child was dead-born.—This woman was afterwards delivered by M. Ridé, a midwife. The child, which presented one hand, was born alive, but died very soon.
4			—La Forets aux Gobelins.			The child still-born. The mother able to walk on the 15th day. It is not known whether this woman laboured afterwards.
5	1779	M. Le Roy.	Julie Collet.	2 $\frac{8}{12}$ inches.	2 $\frac{1}{2}$ or 2 $\frac{2}{3}$ inches.	This child was extracted by the feet, and at first appeared to be dead, but was recovered. The ossa pubis are said to have been separated almost three inches. The woman walked on the 12th day. She suffered afterwards from a prolapsus uteri.
6	1779	The same.	—Du Belloy of Gros-Caillecou.	3 $\frac{8}{12}$ inches.	Said to be only 1 $\frac{1}{2}$ or 1 $\frac{3}{4}$ inch; but was found by Baudelocque to measure 2 $\frac{3}{4}$, at the least.	The child small, and brought into the world alive by the feet. The wound said to be healed on the fifth day, and the woman walked on the 10th day.—She was afterwards delivered of one child by M. Le Roy; and of two children by Mad. du Sellier, a midwife, which only gave slight signs of life. It is doubted whether the operation was really performed on this woman. She had a prolapsus uteri after the operation.
7	1785?	The same, assisted by M. de Matthiis.	—Huguet.	3 $\frac{9}{12}$ inches.	Said to be only 2 $\frac{1}{4}$ inches, but was found to be more than three inches by Baudelocque.	The child healthy. The ossa pubis are stated to have been separated more than 2 $\frac{1}{2}$ inches. The woman was well on the 17th day. She laboured under a prolapsus uteri afterwards.
8	1785.	The same.	at M. Morlai's a midwife.		Two inches according to M. Le Roy; above three inches according to Baudelocque.	The child was living. The mother recovered very well.
9	1778.	M. Cambon.	El. Loure at Mons.		Pelvis not much distorted.	The child died. The mother recovered very well. She had twice been delivered of dead children by the forceps.
10	1780.	The same.	The same.			The child large, and healthy. The wound healed in 27 days.
11	1779.	The same.	—Marchant at Mons.		The interior aperture very much contracted from the approximation of the ossa ischia.	The child extracted alive by the forceps. The mother was able to walk in 30 days. It was her first labour.
12	1778.	M. Després de Menneurs.	A. Berrou, near St. Pol de Lion.		Stated to be only 1 $\frac{1}{2}$ or 1 $\frac{3}{4}$.	The child dead. There is strong reason for believing that only the integuments were divided in this case. The woman sat up on the first day, and walked on the 3d. She laboured naturally afterwards in 1779 and 1780.
13	1778.	M. Siebold.	M. Markard of Piersdorf.		From 2 $\frac{1}{4}$ to three inches.	The child was dead before the operation, and its head was so much contused, and extracted with so much difficulty, that it is thought it could not have been saved, if it had been alive. The symphysis was in part divided by a saw. The urethra sloughed. The wound healed in 18 months. She had born seven children: The last of which was brought away piecemeal.
14	1779.	M. Van Damme of St. Omer.	—Bramier, at Racquengien		It is believed that the pelvis was not deformed.	The child was much injured by the forceps, and lived only three weeks. The mother was endangered by the operation. She had three children living, at the time it was performed.
15	1779.	M. Duret of Brest.	—		An exostosis of the size of a nut on the side of the sacrum, near its junction with the coccyx.	The child extracted by the forceps without any signs of life: The wound torn into the os externum, and the perinaeum lacerated. The ossa pubis exfoliated: The anterior part of the bladder and vagina destroyed by gangrene.—Prolapsus uteri and Incontinence of urine were the consequences.
16	1779.	M. Van Munster.	—Van Loven near Bommel.		2 $\frac{1}{4}$ inches. Deformity occasioned by Ricketts.	The child dead, and extracted by the forceps. The mother was well in six weeks.
17	1779.	The same.	—Verploeg near Bommel.		Scarcely three inches; the pelvis distorted by Ricketts.	The child preserved. The woman was able to walk in a month, and was well in six weeks.
18	1779.	M. G —	—Leblanc, at Batigny.			The child was extracted with the forceps, but I do not know whether it was alive or dead. This woman was delivered with so much expedition in her next labour of a healthy child, that the midwife did not arrive in time to receive it.
19	1780.	A pupil of the College of Cadiz.	—			I have seen no account of the child. The operation is believed to have been performed unnecessarily in this case.
20		M. Brodthlag, Junr.	—			The child was born dead. The mother, who had born two children before, was perfectly well in 22 days.
21		M. Groshans of Gertruydenberg.	—Sprang.			It is not stated in the account, which I have seen, whether the child was born alive.
22	1780.	Don Juan Delhuyar.	—in Spain.		Very much contracted.	The child preserved. The mother walked on the 38th day. Gazette de Madrid Nov. 24, 1780. This appears to be the same operation, which is stated to have been performed by M. Connivel in Richters Bibl. B. 7. p. 470.
23	1780.	Don Antonio Delgado.	—in Spain.			The child preserved. These two Spanish cases are mentioned by Michell, p. 42.
24	1793.	M. Damen of the Hague.	—Stols, a Goldsmith's wife.		At the interior aperture, from pubes to sacrum four inches, from one ischium to the other three inches.	The child preserved. The mother recovered very quickly, the ossa pubis having been separated only a finger's breadth in one case, and two finger's breadth in the other.
25	1685.	The same.	The same.			The child preserved. The mother recovered very speedily.
26	1786.	M. Verdier Duclos.	At Ferté-Bernard.		Stated to be only 1 $\frac{1}{2}$ inch.	The child died as soon as it was born. The ossa pubis are said to have separated about 2 $\frac{1}{4}$ inches.
27		M. Löffler of St. Petersburg.	—			It is not stated by Richter (Bib. 12. p. 364) whether the child was born alive. The mother was well in a month afterwards.
28		M. Desmarts.	—			No mention is made of the child. The woman escaped with her life, but suffered much from an exfoliation of the bones of the pubis, and other accidents.
29		A Surgeon in Prussia.	—			No mention is made of the fetus. The woman survived the operation, but suffered from gangrene, and from exfoliation of the ossa pubis.
30		M. Der.	—			The child preserved. The only account I have seen of the three last cases is in Michell's Comm. de Synch. Pub. p. 40. 41. 139 &c.

TABLE II. Cases of the Section of the Symphysis Pubis, in which the Mothers did not survive the Operation.

Case.	Year.	Names of the Operators.	Names of the Patients.	Short diameter of the fetal head.	Distance from the symphysis pubis to the os sacrum.	Event of the operation, with respect to the child, and other observations.
1.	1778.	M. Sigault.	— Vepres.	$3\frac{7}{12}$ inches.	Stated to be from 22 to 23 lines.	The child dead born. The mother lived only five days, and in great agonies. The sacro-iliac symphyses were separated in part, the periosteum detached, and matter formed. The ossa pubis were separated about $1\frac{1}{2}$ inch by the operation.
2.		M. Le Roy. M. Baudelocque &c. present.	Fauxbourg, St. Germain.	$3\frac{5}{12}$ inches.	$2\frac{1}{2}$ inches. Transv. diam. 5. Oblique diam. $4\frac{1}{2}$.	The child preserved. The mother died on the 8th day. The sacro-iliac symphyses were separated; matter formed, and the uterus was gangrenous: The ossa pubis were not separated quite two inches during the operation.
3.	1778.	M. Lescarde and M. Retz.	at Arras.		$2\frac{1}{2}$ according to Sue.	The child scarcely shewed any signs of life. The mother died on the third day.
4.	1778.	M. Nagel.	A. M. Schmid-drim, near Spire.		3 inches.	The child lived a quarter of an hour. The sacro-iliac symphyses were very moveable; the wound, vagina, and uterus were gangrenous: The mother died on the 8th day. She had had three mature children, two of which were stillborn.
5.	1778.	Mr. Bonnard of Hesdin.			2 inches.	The child preserved. The section of the symphysis pubis attempted, but not completed, owing to a real or supposed ossification of the symphysis. The delivery was accomplished by the Cesarean Operation.
6.		M. Guerard.	— Langens at Dusseldorp.		$2\frac{1}{2}$ inches.	The child was dead. Several attempts were made to extract the child by the feet after the section of the symphysis, but without success. The head was afterwards opened, and the brain discharged. The mother survived her delivery only eleven hours.
7.	1781.	M. Cambon of Mons.	— Hucq.		$2\frac{7}{12}$ inches.	The funis presented, and the child was dead, before the operation was undertaken. It was found very difficult to divide the symphysis pubis. The mother died. The right sacro-iliac symphysis was separated seven or eight lines, and a great quantity of sanious matter was formed.
8.	1781.	M. du Chaussoi.	Françoise in the Hôtel Dieu at Lyons.		$1\frac{7}{12}$ inch.	The child was dead before the operation. The mother survived it only 52 hours. The appearances on dissection like those observed in other fatal cases.
9.	1782.	M. Lavaguigno of Gènes.			$2\frac{5}{12}$ inches.	The child supposed to be dead, and extracted by the crotchet, but it was found to be alive and lived several hours. The mother lived only twelve days. The external parts, the vagina and uterus were in a gangrenous state.
10.	1782.	Mr. Welchman, of Kingston, in Warwickshire.	Mary Ordway.		$2\frac{1}{2}$ inches. The pelvis distorted from Malacosteon.	The child was putrid. The mother lived only six days. For the particulars of this case see Defence of the Ces. Oper. p. 138 &c.
11.	1783.	M. Riollay of Pimpol, in Brittany.		$3\frac{9}{12}$ inches.	Three inches. From coccyx to symph. pubis. only $2\frac{1}{2}$ inches.	The child had been dead some time. The mother only lived an hour and a half. The sacro-iliac symphyses were torn.
12.	1783.	M. V—			Stated to be $1\frac{8}{12}$ inch.	The child was dead, and the mother in extreme danger, when the operation was performed. She died immediately after her delivery.
13.			at Naples.			It is not stated whether the child was alive, in any account that I have seen. The mother died from hemorrhage.
14.	1785.	M. de Matthis.	M. Rouillé at Paris.	$3\frac{1}{4}$ inch.	$2\frac{1}{2}$ inches.	The child was dead. The mother complained of great pain in the loins and left hip immediately, and died on the 9th day. Marks of great injury appeared on dissection. This woman had born three children, the first of which lived 15 months.

Obs. These two Tables include forty four cases of the Section of the Symphysis pubis, from which we find, that 30 women have survived the operation, and 14 have died: that 15 children have been preserved; 22 have been dead-born, or have died immediately after birth; and of seven no account is given.—This operation is also said to have been performed at Constantinople (See Michell p. 42); at Frankfort; at La Ferté-aux-Vidame; and at Baunierres in Artois (See A. Roussel de Vauzemes De Sectione Symph. Oss. Pubis p. 95); but the event is not stated with respect to any of these cases.

Amongst the unsuccessful cases there are several, where the pelvis measured more than two inches and a half from pubis to sacrum. And it may be doubted, whether the Sigaultian operation has ever preserved the life of either the parent, or child, where the pelvis measured less than two inches and a half in the direction just specified. In the 6th, 7th, and 8th cases of the 1st Table, the operator has stated the dimensions to be considerably smaller; but M. Baudelocque afterwards measured the pelvis of each of the women, who were the subjects of these cases, and found the dimensions larger than two inches and a half. In case 12th. M. Després de Menmeurs has stated the dimensions to be one and a half, or one and two thirds of an inch only from the sacrum to the symphysis pubis; but the patient laboured naturally twice afterwards—a convincing proof, that he was egregiously mistaken, or guilty of a wilful misrepresentation. And in the case, which occurred to M. Verdier-Duclos, (Case 26th,) although the antero-posterior diameter is stated to have been only $1\frac{1}{2}$ inch, I am of opinion, that the dimensions will be found greater, whenever it is accurately measured by another person, because the requisite space from the fore to the back part of the pelvis could not, I believe, have been procured without destroying the mother.

When I wrote my short history of the Sigaultian operation, it was not my intention to enter further into the consideration of this subject; but, as no other writer has collected an account of all the recorded cases of this operation, I have been induced to add these two tables, with a few additional remarks.

TABLE II. Cases of the Section of the Symphysis Pubis, in which the Mothers did not survive the Operation.

Case.	Year.	Names of the Operators.	Names of the Patients.	Short diameter of the fetal head.	Distance from the symphysis pubis to the os sacrum.	Event of the operation, with respect to the child, and other observations.
1.	1778.	M. Sigault.	— Vepres.	$3\frac{7}{12}$ inches.	Stated to be from 22 to 23 lines.	The child dead born. The mother lived only five days, and in great agonies. The sacro-iliac symphyses were separated in part, the periosteum detached, and matter formed. The ossa pubis were separated about $1\frac{1}{2}$ inch by the operation.
2.		M. Le Roy. M. Baudelocque &c. present.	— Fauxbourg, St. Germain.	$3\frac{5}{12}$ inches.	$2\frac{1}{2}$ inches. Transv. diam. 5, Oblique diam. $4\frac{1}{2}$.	The child preserved. The mother died on the 8th day. The sacro-iliac symphyses were separated; matter formed, and the uterus was gangrenous: The ossa pubis were not separated quite two inches during the operation.

And of the women, who survived the operation, several remained infirm, or suffered very distressing complaints for a long time, or for the remaining part of their lives. The confidence of M. Sigault in this new practice diminished so much, that he declined attempting it, when the pelvis did not measure, at least, two inches and a half, in the antero-posterior diameter of its superior aperture. And, as a proof that he did not consider it, as capable of superseding the Cesarean Section in all cases of deformity of the pelvis, it is proper to mention, that he actually proposed the latter operation, a few days before his death, in a case, where the pelvis had, at least, this space in the diameter just specified, as we are informed by Baudelocque.* All the former advocates for the Section of the Symphysis Pubis have long remained silent: And not a single case of the performance of it has been published, since the year 1787. Being no longer recommended by any practitioner, *who has seen it performed, and attended to its consequences*, this operation may be regarded, as fully proved to be incapable of bearing the test of general experience, and as having fallen into general neglect and disuse.†

* T. II. P. 467.

† If the Section of the Symphysis Pubis can with pro-

The fate of the Cesarean Section has been very different. From the time of its being first had recourse to, upon the living female, about the year 1500,† though, at certain periods, most vehemently and unreasonably‡ opposed by different individuals, it has been able to maintain its ground, as an established operation; and, at the present day, it is recommended by a consi-

priety be employed in any cases, it is, perhaps, applicable: 1st. where only the transverse diameter of the *inferior* aperture of the pelvis is so much contracted as to render delivery impracticable, without employing the Crotchet or Cesarean Section; 2dly, where the pelvis is too small in all its dimensions, but not distorted, as has happened in some well formed women of very small size.—For an account of the destructive effects to be expected from this operation, when combined with embryulcia, as a substitute for the Cesarean Operation, see above, p. 33, and Defence of the Cesarean Oper. p. 130.

† It was first practised by J. Nufer of *Siegerhausen*, upon his own wife, and with complete success, both the parent and child being preserved by it.

‡ “*Cæsarea Sectio crudelis, immo, clamante frustra Rousseto, abominanda habebatur, sic ut non, nisi elapso longo temporis spatio, debellatis pertinaciæ, præjudicii, erroris, & ignorantiae conaminibus, laudari, & cum successu institui potuerit.*”—*Samoilowitz Tract. Pr. p. 3.*

derable majority of the most eminent writers on Surgery and Midwifery. As, however, it may be more satisfactory to appeal to facts than to authorities, respecting the propriety and necessity of a mode of practice, upon which accoucheurs are not *unanimously* agreed; instead of adducing the immense number of respectable names, which it is in my power to bring forward, I shall shew by an appeal to experience, that the necessity of the operation cannot be superseded, since cases have occurred (and may therefore be expected to occur), in which the delivery could not be accomplished by the crotchet, or any other means, compatible with the safety of the parent or her offspring; and that the objections, urged against this operation by several authors, are theoretical and ill-founded.

I am ready to allow, that, in some cases, where delivery by the crotchet is impracticable, at the full period of utero-gestation, if practitioners were previously acquainted with the extremely contracted state of the pelvis, and the consent of the patients could be obtained, the Cesarean Section might be rendered unnecessary, by inducing abortion or premature delivery, as

proposed by Petit, and others. But, as the extent of the deformity is rarely known, before the accession of regular labour, and, as there are other cases, in which the operation ought to be resorted to, this expedient could only *diminish*, not *supersede*, the necessity of employing it.* The practice of inducing premature labour has not, I believe, in any case been had recourse to, with the view of obviating the necessity of the Cæsarean operation; but I am informed, that it has been employed in the 7th or 8th month, with success, in more than one case in London, in order to preserve the life of the child, in those smaller degrees of distortion, which require the use of the crotchet.

Of the earlier writers, whom you have brought forward, as reprobating the operation in question, Paré, Mauriceau, and Dionis have opposed it upon the supposition, that the wound of the

* Upon the propriety of this practice, authors are not by any means agreed. "An in pelvis tali angustia, quæ partum cæsareum poscit, abortus, ut cæsarei partus periculum & dolor evitetur, procurandus est? Non." WEIDMANN Compar. inter Sect. Cæsar. & Dissec. Cartilag. & Ligam. Pubis, &c. 1779.

uterus must necessarily occasion a fatal hemorrhage—an opinion which I have demonstrated to be unsupported by facts.† Indeed, I do not find, that, in any one case, the discharge of blood has been greater than is usual after a perfectly safe natural labour.

Amongst the writers of the present time, I can only discover three declared opponents of the Cesarean Operation in every case whatever, Dr. Osborn, M. Sacombe, and yourself.

Of Mons. Sacombe I have already had occasion to speak in the first part of this letter, and to notice his unqualified condemnation, not only of the Cesarean and Sigaultian Operations, but of the *Crotchet* and even of the *Forceps*, an instrument, which may be used, with perfect safety both to the parent and child. This he did, upon the supposition that *Nature* and *Time* are capable of surmounting every obstacle to parturition. But convinced, by further experience, that the principle, upon which his objections were founded, is erroneous, he has retracted his opinion. In a case of difficult parturition, arising from deformity of the pelvis, where he attended with Bau-

† Defence p. 44.

delocque, and other celebrated Accoucheurs, "it was determined in consultation, and in this Cit. Sacombe concurred, that the crotchet should be employed: Loth, however, as it would seem to quit a path, which he had so boldly trodden, M. Sacombe delayed the operation, till the next day. The woman died on the 5th following."* From this occurrence, it may be presumed, that M. Sacombe's opposition to the Cesarean Section will now cease.

Dr. Osborn has declared, that the operation is inevitably destructive of the life of the mother, and has made the following assertion: "Whenever there is a space from pubis to sacrum, or from the fore to the hind part of the upper aperture of the pelvis, equal to an inch and a half, I am convinced it will be always practicable to extract a child by a crotchet, after the head has been some time opened, and the texture of the child's body is softened by putrefaction (as recommended above), and the whole of the parietal

* Med. and Chirurgical Review, for Sept. 1799. I am under the necessity of quoting from this Review, as I have not yet been able to procure the Memoir of Baudelocque, from which the above account is taken. Should I receive it, before this work is published, it is my intention to give a tabular view of all the cases collected in it.

and frontal bones are picked away ; and that— with tolerable facility to the operator, and perfect safety to the patient.” Essays p. 230. The Dr., indeed, afterwards acknowledges, as I have stated above (p. 63), that the Cesarean Operation has succeeded in *one or two* recent instances on the continent, and that the crotchet has proved fatal *in a very few instances* in this country. He might, however, have said, with truth, that the Cesarean Operation has been practised with success on the continent in *many recent instances*,*

* “ M. Baudelocque has collected seventy-three instances of the performance of the Cesarean Section since the year 1750, and has subjoined the event of each. *More than fifty* of these were had recourse to, on account of deformity of the pelvis; *five*, after rupture of the uterus or vagina; *one*, on account of a schirrous tumour, obstructing the pelvis; and the remainder, because the operators were unable to turn and bring the child by the feet, from its awkward situation, and the too strong contraction of the womb. In *thirty-one* of these cases, the life of the mother was preserved: *in all*, that of the children might have been so, had the operation been performed in time.

“ Amongst those women, to whom the operation was fatal, many were in a hopeless state, before it was undertaken; others were the victims of causes, which were foreign to it, and which therefore afford no argument against it.

“ The successful termination of these cases is no proof of

and that the crochet has proved fatal to the mother in a very great number of instances in this country. There are, I believe, few accoucheurs in extensive practice, who cannot furnish one or more instances of the fatality of embryulcia, and, if these were collected, I have little doubt but they would amount to some hundreds.

I have shewn in my *Defence of the Cesarean Operation* (p. 203.), that a moderate-sized child cannot be extracted by the crotchet, through a pelvis, having the dimensions of Eliz. Sherwood's, as stated by Dr. Osborn. Either the pelvis must have had larger dimensions; or the child must have been smaller than the middle size, or not full grown; and I have reason to believe that all these circumstances existed. 1st. Because a gentleman, who examined Sherwood, could not assert that the pelvis was as narrow, as the Dr. has said (See *Defence* p. 111); and 2dly, Because I have several times brought into the world children, supposed by their mo-

the necessity of the Cæsarean operation, even in the instances where it was employed: they establish, however, the very important point, that this operation is not, as has by some been said, essentially and inevitably fatal to the mother." *Med. and Chir. Review* for Sept. 1799.

thers to have been dead three weeks or a month, without finding them nearly so putrid as Sherwood's child is represented to have been.

But admitting the Dr's. own statement of the case of Elizabeth Sherwood to be correct, it will not warrant the conclusion, that it will be always practicable to deliver a woman by the crochet, whose pelvis measures one inch and three quarters from pubes to sacrum, much less if it should only measure one inch and a half, as I have already demonstrated.* The pelvis of Sherwood is said to have measured one inch and three quarters from the fore to the hind part, at the widest part of the upper aperture;† the head of the child presented; the perforation of the child's cranium "was attended with *considerable diffi-*

* Defence p. 208.

† See plate IV. fig. 1. I have thought it necessary to give an outline, having the dimensions of the superior aperture of the pelvis of E. Sherwood, as stated by Dr. Osborn, that the reader may have an opportunity of comparing it with the base of the fetal cranium, as shewn in the different engravings given in my "Defence, &c." Pl. 4, 5, 6.

"Segnius irritant animos demissa per aurem,

"Quam quæ sunt oculis subjecta fidelibus."——

Hor. De Arte Poet.

culty, and some danger ;" and, to complete the delivery, the united force of the Dr. and an assistant was obliged to be strongly exerted. Let us now suppose, that the dimensions of the pelvis, in this case, had been a quarter of an inch less, from the fore to the back part of the superior aperture ; that the child had been larger than the middle size ; and that it had presented preternaturally ; how would Dr. Osborn have been able to accomplish the delivery by the crotchet ? Every one, who is acquainted with the dimensions of the base of the fetal cranium, and the limited powers of this instrument, must acknowledge, that delivery would then have been utterly impracticable by it.

The Dr. speaks of proving that the Cesarean Operation " may *almost always* in future be prevented." Essays p. 196. And here he ought to have stopped : But, not contented with this, for *vires acquirit eundo*, he afterwards (p. 469) delivers it as his opinion, " that the necessary organs cannot be so constructed, as to permit conception to take place, and gestation to proceed to its completion (while the functions are going on), where the pelvis is so deformed in shape, and so contracted in capacity, as not to allow of a child's being extracted through the

natural passage by the crotchet, in a putrid and reduced state." This declaration astonishes me : 1st. Because the contrary might have been expected by him, even *a priori* ; for, if the causes, by which the deformity of Elizabeth Sherwood's pelvis was produced, had operated with the same force upon the right side, as upon the left (and it is just as easy to conceive, that they might have acted equally as unequally), the very case, which he believes impossible, would have been produced in this instance. The space betwixt the pubes and sacrum, and from the fore to the hind part, throughout the whole of the left side of the pelvis, is stated by the Dr. not to have exceeded three quarters of an inch ; yet it was sufficient to allow the natural discharges to take place ; and, certainly, the Dr. will not contend, that he could have extracted the child through the middle, or left side of Sherwood's pelvis. 2dly. Because the Dr. must know, that dimensions smaller than those, stated by himself, as admitting of delivery by the crotchet, had actually taken place in the case of Mrs. Elizabeth Foster, upon whom the Cesarean Operation was performed in London, in the year 1774. Her pelvis, according to Dr. Cooper's account, " appeared to be

about an inch and a quarter* from the symphysis of the *ossa pubis*, to the projection at the upper part of the *os sacrum*, and gradually to become narrower and narrower on each side, till it terminated laterally in a very small point indeed. The *rami ischii* were likewise evidently almost close together." Med. Obs. and Inq. vol. 5. p. 225.

Dr. Osborn does not admit, he informs us, of the existence of that necessity, which will, in the words of *his old friend* (Dr. Denman), justify this operation, "by every principle of religion, and the laws of civil society, by as decisive and satisfactory evidence as any other operation, which we never hesitate to propose, or to perform." *Introd. to Midw.* vol. II. p. 233. But he exclaims, "Indeed deplorably trifling must have been our advances in the science of Midwifery, compared with other branches of the practice of physic and surgery, if, at the end of the eighteenth century, *we are not able to banish from practice the only fatal operation*, which has continued to dis-

* This poor woman's pelvis was examined after death, and, as no further notice is taken of the dimensions of the superior aperture, we may conclude they were found as in the above statement.

grace our profession for three hundred years!"
Essays, p. 470.

This, it must be confessed, is a very modest way of intimating, that the numerous real improvements, introduced by other accoucheurs into the practice of midwifery, and, which are not inferior in importance to those, made in any other branch of the healing art, are deplorably trifling, in comparison of his chimerical attempt to banish the Cesarean Operation by the use of the crotchet.

Regarding the use of the crotchet as proper and necessary, even when the child is known to be alive, in *certain* degrees of deformity of the pelvis, I would not be understood to mention the employment of this instrument, as an operation, which continues to disgrace our profession;* but I cannot avoid reminding the Dr., that the crotchet has been destructive of many more lives than the Cesarean Operation, and that

* The employment of the perforator and crotchet, when the fetus is alive, is by many writers on the continent of Europe considered as criminal. "In *fætum vivum* uncus & perforatoria adigere *nefandum facinus* est. WEIDMANN.

it has been in use a much longer time than three centuries.

In conducting your opposition to the Cesarean Operation, you have shifted your ground in three successive publications. In your "Reflections, &c." you have proposed to substitute for it the compound operation of Synchronotomia Pubis and Embryulcia, and told us that "it will furnish a resource, approved by reason and sanctioned by experience:" But finding, that it was neither approved by reason, nor sanctioned by experience, you chose in your "Detection, &c." to *echo* the doctrines of Dr. Osborn, and to express a hope, that your compound operation will never become necessary. And having soon after, by a singular concurrence of circumstances, been called to the assistance of a poor woman in labour, whose pelvis was too much distorted to admit of delivery by the crotchet;* and *not daring*, I believe, to employ *your*† compound operation, you chose to return home

* See Plate VII. fig. 2, in which the exact dimensions of the superior aperture are delineated.

† The compound operation was proposed by Dr. Wm. Hunter, although you lay claim to it, and style it *your* project. See *Detection*, p. 57.

without making any attempt to deliver her. You soon afterwards published a kind of exculpatory Letter, dated Aug. 21, in the Medical and Physical Journal for October 1799, in which you neither allude to this case, nor mention the omnipotence of the crotchet, or your compound operation; but attempt to shew, that the performance of the Cesarean Operation is MURDER, and contrary to Laws human and divine.

The poor woman, just alluded to, whose name was Elizabeth Thompson,* lived at Hazlehurst, near Ashton-under-Line, about *nine* miles from Manchester. You visited her, at the request of Mr. Ogden, a Surgeon at Ashton, (who was first called in), on the 24th of June 1799, and you inform us, in a Letter, dated October 27, and inserted in the Medical and Physical Journal, Vol. II. p. 438, that the case appeared to you “*to be one of Dr. Osborn’s crotchet-cases.*” Yet, instead of adopting the practice, recommended by the Dr. in such cases, agreeably to your own declaration,† you chose to leave her. Mr. Ogden likewise acquaints us,

* See Mr. Wood’s Account of the case in the 5th Vol. of the Memoirs of the Medical Society of London.

† See above p. 32.

that you were "of opinion that the case was one of Dr. Osborn's crotchet-cases;" and adds, that "as it *was impossible* for Mr. S. to undertake the case *at such a distance* from home," and as he had *many reasons* for declining it *himself*, he sent her *in a cart* to the Lying-in Hospital in Manchester. I have no doubt, but it will strike every one very forcibly, who has read your "Reflections," that, as this poor creature was actually conveyed to Manchester, she might have been continued under your care as a patient of the Lying-in Department, which you boast of having been the principal instrument in getting attached to the Infirmary.* By these means the frightful distance of nine miles would no longer have operated as an obstacle to your attendance upon her. But it does not appear, that you ever proposed to undertake the management of this case at Manchester; hence, it may be very properly inferred, that the *distance*, assigned as the ostensible reason for your deserting this poor woman, was, as Mr. Tomlinson† has observed, *nothing more than a pretence to disguise your desire to return home, and to get excused from attending any longer upon a patient, whom nothing but the operation, which you*

* Reflections, &c. p. 56.

† Letter to Mr. Ogden, p. 7.

have so unjustly and shamefully reprobated, could relieve.

Had a candid practitioner been consulted in this case, and entertained the same notions, relative to the omnipotence of the perforator and crotchet, which you have pretended to have, he would have judged it an indispensable duty, in my opinion, to remain with the patient, notwithstanding the distance, and to employ these instruments, if practicable. And if, after waiting a proper time, he should have found, as proved to be the case, the pelvis* so contracted, that no part of the child could possibly be touched with a finger, and consequently that the perforator and crotchet could not be used, with any degree of safety to the mother, he would have candidly confessed to Mr. Ogden, that the notions he had adopted from Dr. Osborn, relative to embryulcia, were then *proved* to be ill-founded; he would have acknowledged, that humanity required him to have recourse to the only means, which could possibly benefit either mother or child—the Cesarean Section; and would have laid the whole of his proceedings before the public, to prevent

* See Plate VII.—I have to acknowledge my obligations to Mr. Wood for the use of this plate.

others from entertaining the same erroneous opinions.

You could scarcely hope to have had a more favourable opportunity for ascertaining, whether the crotchet can invariably supersede the Cesarean Section, in all cases of extreme deformity of the pelvis, than was afforded you by this case: For the pelvis has rarely, if ever, been found more contracted. And, if you had succeeded with this instrument in preserving the life of the mother, at the expence of that of her offspring, I should very gladly have paid you the following compliment—"eris mihi magnus Apollo;" and have no doubt but all my professional brethren would have concurred in thinking you merited it; and the same may be observed with regard to your compound operation. But your conduct upon this trying occasion evinces, to me at least, that you had neither *confidence* enough in the crotchet, or in the compound operation, you have recommended, to employ them; nor *candour* enough to have recourse to the operation, which you have declared to be unjustifiable; though convinced, that she could be delivered by no other means. For,

* See above p. 11.

since you have boasted so much of your *humanity*,* can it *reasonably* be supposed, that you forsook this distressed female on account of her poverty?

Upon whatever grounds you chose to discontinue your attendance upon this poor creature, it is certain that, in consequence of your refusal to undertake the case, she was conveyed, in the vehicle above-mentioned, to the Lying-in Hospital, in Manchester. She arrived there on Monday the 24th of June, about two o'clock P. M., and at half past eight the same evening, (nineteen hours from the commencement of her labour), Messrs. White, Hall,† Tomlinson, Wood, and Thorp met in consultation upon her case. Mr. White's absence from Manchester prevented their meeting at an earlier hour. "They were unanimous, that the pelvis was so much dis-

* See above p. 11.

† Mr. Hall of Manchester, attended this same poor woman, in conjunction with Mr. Ridgway of Ashton-under-Line, and delivered her with the crotchet on the 14th of July, 1792. Her pelvis was then much distorted, but not nearly so contracted as it was found to be at this time. The distortion was produced in consequence of *malacosteon*; for, about nine years ago, this patient was delivered of a living child after an easy labour.—See Mr. Wood's Account.

torted, that none of them could perceive either the child, the *os tincae*, or any part of the uterus; that nothing but the Cesarean Operation could give any chance either to the mother or the child, and that no time ought to be lost in performing it." Further Statement, &c. by Messrs. White, Hall, Tomlinson, and Thorp. Med. and Phys. Journal, Vol. II. p. 473.

About nine o'clock, Mr. Wood performed the operation. The incision of the *parietes abdominis* was begun on the left side, a little below the umbilicus, and carried in an oblique direction towards the spine of the left *os ilium*, about six inches in length; and, a corresponding opening being made into the uterus, a large male child was extracted alive. The placenta was brought away, without any difficulty. The intestines, which had protruded at the wound, being carefully replaced, the lips of the wound of the abdomen were secured by the interrupted suture, and kept in perfect contact by slips of adhesive plaister. A flannel bandage was applied so as to occasion a moderate degree of pressure upon the abdomen. The epigastric artery was not wounded. The quantity of blood, lost during the operation, did not appear to exceed eight ounces, and proceeded

principally from the uterine vessels. The patient scarcely made a complaint.

She lived till one o'clock on Friday morning, seventy-six hours after the operation. About six hours after her death, the body being inspected, "There were about ten ounces of bloody serum, with a little coagulated blood (not more than an ounce) in the cavity of the abdomen. The intestines were much distended with wind; but very few fæces were contained in them, and none of them were hardened. There was no appearance of peritoneal, or intestinal inflammation; no inflammatory exudation;"—"nor had the intestines formed any adhesions; nor were there any unfavourable appearances about the wound in the uterus, or in that of the integuments. The uterus was taken out of the body, and the *os tincae* was found dilated to about two inches and a half in diameter; but still nothing could be discovered, that could possibly account for her death, until it was cut open; when, the inside being carefully washed with a sponge and warm water, a *gangrene* appeared quite round the inside of the neck of the uterus, rising higher, in nearly a circular form, in the fore part, where the child's head was believed to have pressed it against

the elevated part of the *ossa pubis*. This mortification in the neck of the womb, which was totally unconnected with the incision in that organ, we consider as sufficient in itself to account for the death of the woman."—"In the course of that day, the following gentlemen attended, and saw the uterus and pelvis, Dr. Holme, physician to the Infirmary; Dr. Hull; Mr. Bill, Mr. Killer, Mr. Ward, and Mr. Hamilton, Surgeons to the Infirmary; Mr. Taunton, surgeon to the Cornwall Fencibles, at the Barracks; and Mr. William Henry."—"Mr. Simmons, in a note to Mr. Wood, thanks him for his polite attention, but declines in the present instance accepting his invitation." *Further Statement, &c. &c.* inserted in the Med. and Phys. Journal, Vol. II. p. 474.

As the letter, above alluded to (p. 109), is perhaps the most extraordinary and curious of any of your fugitive productions, I am induced to offer some observations upon it in this place.

You begin with saying, "The maxim inculcated by writers on surgery, that a wound of the uterus is *mortal*,* is confirmed by the *uniformly*

* A very proper and indeed necessary distinction of mortal wounds is into 1. such as are necessarily and absolutely

fatal event of the Cæsarean Section."—HIPPOCRATES in his *Aphorisms* Sect. VI. § 18. has stated in general terms, that wounds of the bladder,* brain, heart, diaphragm, small intestines, stomach, and liver are mortal: "Κύστιν διακοπέντι, ἢ ἐγνέφαλον, ἢ καρδίην, ἢ φρένας, ἢ τῶν ἐντέρων ἢ τῶν λεπτῶν, ἢ κοιλίην, ἢ ἥπαρ, θανάσιμες." But he does not here include wounds of the uterus: Nor do I know by what surgeons the maxim, mentioned in the beginning of your letter, is inculcated, except you allude to *Paré, Mauriceau, and Dionis*. You must know, however, that it is not a true maxim, if it be meant to extend to all wounds of the uterus. It cannot have escaped your notice, that women have recovered, in this kingdom, after a child has passed through a rupture, or *lacerated* wound of this viscus into the abdomen. You *must* know also, that the large incised wound, made into it in the Cæsarean Operation, *is not uniformly fatal*, for you have, with Dr. Osborn, admitted the con-

mortal, and 2. such as are accidentally mortal; but this is a distinction to which you have paid no attention.

* On this account he was induced to bind his students by an oath not to perform lithotomy. "οὐ τέμνω δὲ οὐδὲ μὴν λιθιῶντας." ΟΡΚ. ΙΠΠΟΚ.

trary in your "Reflections, &c."* And the great number of successful cases of this operation, of which I have taken notice, in the course of our controversy, is, I think, fully sufficient to satisfy any unprejudiced mind, that the operation, so far from being uniformly fatal, affords a reasonable chance of recovery to the mother, when it is performed upon a woman in a good state of health, and before her strength is exhausted, or a dangerous contusion or inflammation of the pelvic or abdominal viscera is induced.

The uterus is an organ, which is not indispensably necessary to the life, or even health of a female. In the human subject it has been found entirely wanting from birth. "Lustrato cadavere cujusdam fæminæ *sterilis*, alias sanæ, quæ mirum in modum querebatur quoties cum viro coibat; genitalia externa & vagina, nil peculiare & morbosum referebant, sed haud citra stuporem annotabatur, uterum & testes plane desiderari." COLUMB. Lieutaud Hist. Anat. Med. Lib. I. Obs. 1461. It has, in several instances, been completely removed without proving fatal; and we have one well authenticated case, where it

* "Notwithstanding this cheerless prospect, it" (the Cæsarean Operation) "is admitted to have been successful on the Continent in one or two instances." Page 29.

was inverted by a midwife, immediately after the birth of the child, and completely cut away at its junction with the vagina, whilst the placenta was still adhering to it; of course its blood-vessels must have been, at that time, considerably enlarged. The poor woman, notwithstanding, recovered, and enjoyed perfect health afterwards. This case is related by Professor Wrisberg in the *Comm. Soc. Reg. Gott. Tom. 8. Gott. 1787*; and as, I presume, you have never seen it, and it is of great importance to the subject under discussion, I shall favour you with the following account extracted from it.

“ Die septimo Junii, 1780, hora 8va. vespertina conveniebat vir probus & honestus JOANNES CHRISTIANUS HEPE, Chirurgus pagi Hassiaci *Eddiehausen* ad *dynastiam Plessensem* pertinentis, qui simul incolis tam hujus vici, quam adjacentis regionis a consiliis medicis esse solebat, aliquot abhinc annis mortuus, & narrabat, se hodie ad puerperam rusticam MAR. DOR. UDE natam SCHMIDT, in pago *Reyhershausen* ejusdem *dynastiae Plessensis* habitantem, vocatum fuisse, cui obstetrix illius loci ANNA CATH. RIPPEL, post partum puellæ viventis maxime naturalem unam cum placenta *magnam massam carneam*, quam simul attulerat, & mihi tradebat, cultro rese-

cuisset. Uterum misellæ esse, statim cognovi, & jam tunc temporis credidi, obstetricem rudi placentæ utero strictius adhærentis tractione, uteri inversionem effecisse, inversumque ex vagina propendentem brevi manu resecurisse, & solutam deinceps ab utero placentam, una cum matrice, in pristinam figuram restituta, sepeliisse, quam etiam conjecturam relationes abhinc collectæ perfecte confirmarunt.”

“ 1.) Puerpera dicta, tunc temporis 24 annorum, primipara, die 5to Junii 1780, hora 7ma. mat. primis ad partum doloribus laborare incepit.”

“ Doloribus sensim fortioribus & magis efficacibus redditis, hora 2—3 pomer. facillimo & maxime naturali partu puellam vivam, beneque conformatam in lucem edidit.”

“ 2.) Remota & in lectum collocata puella, obstetrix ad puerperam rediit, & de solvendis extrahendisque secundinis sollicita, tanto ardore, studio & repetitis contrectationibus, brachiique ad humerum usque in matricem immissionibus puerperam divexavit, ut in lipothymiam incidere & verba tantum pronunciare potuerit, cum ingentem carnis massam ex sinu pudendorum

dependentem observasset, "*O ihr reißt mir ja alles aus dem Leibe,*" & sibi tantum recordatur, cum tantis cruciatibus affectam certissime morituram esse, vehementissimo dolore perfusam se sensisse, & acri clamore vociferasse, sub quo statu procul dubio obstetrix inversum ex genitalibus propendentem uterum resecauit, & partem resectam æque quam deglubitam placentam in amphoram conjecit, paulloque post in terram defodit."

"3.) Mater puerperæ, filiam suam sub enixu gremio fovens, nihil nec de uteri inversione nec ejusdem amputatione rescivit, & adstantes, cum anxietates & clamorem misellæ audirent, hypocausto exiere, redientes dein, magnam carnis massam incognitam resectam cernentes obstupuerunt."

"4.) His peractis puerpera a die partus, qui 5. Junii fuit, usque ad 7. sine omni adhibita cura & medela, cum ad sistendam hæmorrhagiam, tum ad servandam & fovendam puerperam administrata, soli naturæ beneficæ & sospitatrici commissa jacuit. Gravissimum sanguinis profluvium, quod omnino amputationem matricis insequutum est, ut torrentis instar vitalis latex

per conclave decurreret, sub profundo animi deliquio, quod mortuæ instar misellam oppressit, sua sponte cessavit, & die Junii 7. denuo expergefacta ex animi deliquio ægra, debilissima voce efflagitavit, ut dictus Chirurgus HEPE vocaretur. Hoc facto hora 2. pom. diei 7. Junii accessit & ante omnia curavit, ut sepulta massa carnea denuo effoderetur, quam mihi deinceps eodem die hora 8va. vesp. tradidit.”

“Cum die 8. Junii probus & officiosus vir Dnus. HEPE mihi referret, ægram nostram paullo melius sese habere, viriumq̃ restaurationem ab usu acidi mineralis dulcificati non contemendam subsequutam esse: ipse parientem, in sodalitis nonnullorum discipulorum adii.” — “Observavi & annotavi tunc temporis de infelicis hujus feminæ statu sequentia momenta, &c.”

“Præmarium & præcipuum, nempe abdominis, genitalium & pelvis examen ultimum suscepi, & puæ tunc observari & discerni poterant speciatim enarrabo. a.) Abdomen mirum in modum erat extenuatum & collapsum, in hypogastriis præciue vacuitatem tactu deprehendebam, quam mollia reliqua infimi ventris viscera vix implere posse videbantur. b.) In genitalibus, tactu exploratis, canalem vaginæ copiosa materie molli ali-

qua consistentia prædita, ex muco, pure, aliquo sanguine constante, repletum deprehendi, qua remota & exemta, digito altius penetrante notabilem adhuc hiatum versus abdomen patentem tetigi: amplo molli & satis voluminoso corpore, quod vesica urinaria lotio plena fuit, fere claudabatur iste hiatus, liberiores aditus concedens cum lotium cathetere removissem: in posteriore parte rectum intestinum scybalis aliquantisper refertum tangere potui, & in hiatu ipso molliusculum lubricum corpus sensi, quod pro aliquo intestinorum gyro haberi poterat." c.)—Periculum feci, quid respiratio in removendis & deprimendis intestinis versus hunc hiatum valeret. Jussi itaque puerperæ diutius in expirationis statu permanere, & distincte animadvertere valebam, illud lubricum corpus ex hiatu recedere, & sensim rursus prolabi, si nova inspiratio subsequeretur: d.) Evidenter observare poteram canalem vaginæ versus istum hiatum angustiores fieri, & infundibuli instar contrahi; magnitudinem hiatus pollicis diametrum adhuc habere visum est, &c."

" —Non sine insigni oblectamento vidimus de die in diem omnia fieri meliora, ita quidem, ut ægra die 16. Junii extra lectum versari, obambulare & quibusdam negotiis in cubiculo interesse potuerit."

“ Die 4. Julii 1780 denuo ægram nostram nunc fere restitutam visitavi, & rerum statum exoptatum inveni.”——“ Ostium hiatus etiam angustius factum, sed nondum clausum erat, videbatur mihi, mediante lacinia quadam intermedia in duo orificia mutatum esse, quorum quodlibet digiti explorantis apicem admittebat.”

“ Sub initium Septembris—Hiatus ille nondum erat perfecte obturatus, interim tamen arctior reddebatur, & consolidationi proprior: videbatur omnino in quosdam hiatus minores abire velle. Referebat, sibi singularem frigoris in abdominis intimis obvenire sensationem si ventus moveretur, quasi aër per apertam vaginam infimum ventrem penetraret.”

“ Die 12. Dec. 1780 iterum istam puerperam examinavi——distinctius 4 aperturæ notabantur marginibus duriusculis cinctæ, quarum una in vicinia cystidis urinariæ, altera paullo remotior, tertia in altiore regione, & 4ta. posteriora versus.”

“ Die 16. Octobris 1784.——Post mariti, finito bello dimissi, ex America reditum, utitur viri consuetudine, de qua vero asserit, se non amplius voluptatis sensum ex hoc commercio percipere, quam alias percepit—Exploratione cauta,

sollicite & attenta mente instituta, notavi, hiatum illum vaginæ, qui prægresso anno figuram magis irregularem habebat, nunc jam arctius in foramen rotundum contrahi, & diametrum 5 linearum offerre; apicem digiti mei indicis transmittere poteram in exiguum quoddam cavum nucis avelanæ magnitudinis.”

“ Hanc dictam aperturam, digitum alias transmittentem, nunc fere clausam inveni, cum d. 1. Sept. 1786, mulierculam rursus examinavi.”

“ Amputatio uteri exacte illo in loco ab imprudente obstetrice peracta est, ubi uterus cum vagina cohæret. Præcisio potius versus uterum quam versus vaginam directa fuit—“ Tuba fallopiana in utroque latere in medio perscissa est, ita quidem ut in meo præparato eæ tantum tubarum partes cernantur, quæ uterum ingrediuntur, & alterum ovarium pariter careat.”

“ Continebat hoc ovarium dextrum 29 diversæ amplitudinis vesiculas, quarum plures majores pisum grandius superabant. Corporis lutei, quod omnino dolebam, in hoc ovario, nullum vidi vestigium, patet itaque alterum ovarium, sub operatione ista crudeli & inconcinna amissum, corpus

luteum, conceptionis unius fetus sequelam, comprehendisse."

The *speculative* or *supposed* case, which you say practitioners "have failed to describe," had actually occurred to yourself, at the time you wrote the letter, upon which I am commenting; and, although you now appear to have lost sight of it altogether, you seem to have *conjectured* right concerning it at that time, by neither chusing to employ the crotchet alone, nor to make trial of your compound operation; but taking leave of your patient and allowing, if not advising, her to be sent nine miles in a cart, to the Lying-in Hospital in Manchester, as stated above.

You seem to intimate, that wounds of the uterus are as dangerous, as wounds of the heart, and you have asserted, in the most unqualified terms, that a wound of the latter organ "*has invariably proved fatal.*" Whether this assertion be true, may very properly be doubted. It is by no means improbable, that many instances of *superficial* wounds of the heart have occurred without terminating fatally, and without the circumstance's being ever fully ascertained. Since you say "I can conceive that an incision might be made into the right ventricle of the heart, and

that a polypus might be extracted from its cavity ; that the lips of the wound being brought into contact, union by the first intention might take place, and the patient recover ;” perhaps you may also conceive, that this viscus *may be totally removed*, without proving mortal, as I have already shewn that the uterus *has been*. But, whatever your conceptions may *really* be upon this point, I cannot conceive it possible, that your chimerical project for opening the right ventricle of the heart, and extracting a polypus from it, can be executed without proving mortal. Nor do I think it likely ever to be put in execution : For who will undertake to point out the symptoms, by which the existence of a polypus in the right ventricle of the heart can be infallibly determined ? Notwithstanding, if a surgeon, conceiving it upon your authority, to be a practicable operation, should actually perform it, and destroy his patient, he most certainly would not, as you intimate, be deemed guilty of murder ; for, to constitute murder, it is necessary that a person be killed *maliciously* : And, in my opinion, the surgeon would not be deemed guilty of any criminal act whatever ; for it is most probable, that he would be universally believed to have laboured under a paroxysm of insanity at the time ; in which state a man is not chargeable for his own

acts ;—" a total idiocy, or absolute insanity, excuses from the guilt, and of course from the punishment, of *any* criminal action, committed under such deprivation of the senses." Blackst. Com. Book. IV. ch. 2.

It has not been my intention either to employ or to recommend the Cesarean Operation in those inferior degrees of distortion, which will admit of the extraction of the child through the natural passages by the use of the perforator and crotchet, with safety to the mother. Many foreign writers, however, do recommend it as an operation of election, to be used in preference to the crochet, in all those cases, where the child is at maturity, and *known to be alive*. And, when I inform you that the justly celebrated Winslow,* Roederer,†

* In considering this question "An ad servandum præ fœtu matrem obstetricum hamatile minus anceps, & æque insons quam ad servandum cum fœtu matrem Sectio Cæsarea." Haller. Disp. Chir. T. 4.

†Vivus autem servandusque fœtus, qui naturali via integer nasci nequit, ex matrice integra nondum in gangrænam pro-na, si mater viribus valens consentiat, potius dubia prognosi excindi, quam mutilatus certo enecari debet." El. Art. Obs. § 778. "Reliquis operationibus abdominis apertionem, quam Cæsareum partum vocant, utique præferendam

Plenck,* Callisen,† Baudelocque,‡ &c. are of this number, you will, I conceive, allow that some of them were, and that others are possessed of a reasoning mind. It is contended in favour of this practice, that we ought not to employ any means, that are necessarily and avowedly destruc-

esse censemus, quoties ea uti nobis licet, siquidem cum fœtu matrem servare potest." Ibid. § 433.

* "Indicatur hæc operatio 1. Quando diameter conjugata in pelvis introitu 3 pollicibus est angustior, & fœtus vivus, atque maturus simul deprehenditur. 2. Quando *conjugata superior* pelveos duobus pollicibus est minor, etsi fœtus adsit mortuus." &c. &c. Elem. Art. Obs. p. 212.

† "Instituenda erit sectio cæsarea si *pelvis* diameter conjugata vel a nimia prominentia ossis sacri, vel ab ossium pubis applanatione, vel ab exostosi majori, vel a distorsione pelvis, rachitidis sequela, vel a fractura antea perpessa, ita *coarctata* fuerit, ut duobus pollicibus cum dimidio vix æquet, fœtus vero vivus atque maturus deprehenditur; sub quo statu ne quidem a synchondrotomia pubis aliquod expectandum esset." Princip. Syst. Chir. P. II. § 401.

‡ L' application des crochets & autres instrumens destinés à ouvrir le crâne, pour donner issue au cerveau & disposer la tête à s'affaisser, est encore bien plus fâcheuse pour l'enfant que celle du forceps; puisqu'une mort plus ou moins prompte & toujours cruelle, en est la suite. Rien ne sauroit excuser le Praticien qui se comporteroit ainsi sans avoir la certitude de la

tive of the child's life, to save the mother ;† but should give to both the best chance, which the art affords, viz. by employing the Cesarean Operation.

mort de l'enfant auparavant ; elle seule nous donnant le droit de préférer les instrumens dont il s'agit aux autres méthodes." L'Art des Acc. § 1973. " Si la mort de l'enfant doit seule nous autoriser à le démembrer dans le sein de sa mère, lorsqu'il n'en peut sortir entier ; sa vie seule devroit aussi, dans le même cas, nous autoriser à faire l'opération césarienne. Nous en excepterons cependant celui où le bassin est resserré au dernier point, c'est-à-dire, où son petit diamètre est au-dessous de deux pouces : car il ne reste alors d'autre ressource que l'opération césarienne pour délivrer la femme." Ibid. § 1975.

† The following question being proposed to the Drs. of the House of Sorbone, in the month of April, 1648, " Savoir si une femme étant dans les douleurs de l'accouchement, & reduite à telle extrémité, que l'on juge qu'il faut par nécessité qu'elle & son enfant meurent ; mais en tirant son enfant par force (ce qui ne se peut faire, qu'en le tuant,) il y a espérance de sauver la mère ; si en ce cas il est permis de tirer l'enfant en le tuant, particulièrement lorsqu'il a été ondoyé au ventre de sa mere. *Savoir si un Prêtre peut donner ce conseil.*" They gave this answer, prohibiting the destruction of the child.—" Nous Soussignez Docteurs en Théologie de la Faculté de Paris, somes d'avis 1°. Que si l'on ne peut tirer l'enfant sans le tuer, l'on ne peut sans péché mortel le tirer, & qu'en ce cas, il faut se tenir à la maxime de Saint Ambroise 3. des Offices Chap. 9. Si l'on

Although I neither mean to employ, nor to recommend the Cesarean Section, as an operation of election, I am not altogether certain that the British practitioners are right in their decision upon this point.—*Adhuc sub judice lis est.* And Dr. Denman, whose abilities, experience, candour, and caution entitle him to the highest respect, entertains the same opinion, as will appear from the following extract—"I cannot however relinquish the subject, without mentioning another statement of this question, which has

ne peut pas secourir l'un des deux, sans en ofenser l'un, il vaut mieux n'aider ni l'un ni l'autre. 2°. Conséquemment qu'un Prêtre ne peut pas doner ce conseil sans grand péché, & sans tomber dans l'irrégularité; qu'il doit se souvenir de ce que dit le même Saint Ambroise, au lieu allégué, c'est l'Office du Prêtre de ne nuire à Personne, & de vouloir faire du bien à tous.

Signez { Messier. Jaques. Hennequin. Hallier.
Du Val. Grandin. de sainte Beufue.

And the following answer, equally prohibitory, is given by the Drs. of the House of *Navare*. "Les Docteurs sous-signez estiment & jugent que le susdit remède est pernicieus & *crime capital*, vû qu'il tend directement à faire mourir & à la perte de l'enfant qui est en vie, & ainsi on coopère à la mort d'un innocent: ce qui est de soi, & essentiellement un très grand mal.

Signez Beyret. Cornet. Guischard."

See De La Motte *Traité des Accouch.* p. 528.

often employed my mind, especially when the subject has been actually passing before me. Suppose, for instance, a woman married, who was so unfortunately framed, that she could not have a living child. The first time of her being in labour, no reasonable person could hesitate to afford relief at the expence of her child: even a second and a third trial might be justifiable to ascertain the fact of the impossibility. But it might be doubted in morals, whether children should be begotten under such circumstances, or whether, after a determination that she cannot bear a living child, a woman be entitled to have a *number of children*" (more than ten have sometimes been sacrificed with this view), "destroyed for the purpose of saving her life; or whether, after many trials, she ought not to submit to the Cesarean Operation, as the means of preserving the child at the risk of her own life. *This thing ought to be considered.*" INTROD. to Midw. Vol. II. p. 241.—And there are other cases, in which *a reasoning mind* has entertained a thought of performing the Cesarean Section, and very properly, as I shall shew you hereafter.

Where the Cesarean Section is only had recourse to as an operation of necessity, as in Great Britain, the comparative value of the lives of the

parent and the fœtus in utero does not come at all under consideration, when it is to be determined upon; because it is admitted, that there is no other method of preserving either of them. And in France, and other nations upon the continent of Europe, where it is performed as an operation of election, in preference to using the crotchet when the child is known to be alive, the question is not whether the mother's life shall be sacrificed to preserve the child's, or the child's life shall be sacrificed to save the parent's? but whether it is better to sacrifice the child's life inevitably, by embryulcia, for the preservation of the mother's, or to give to both the chance afforded them by the Cesarean Section? And they have determined in favour of the latter operation. As, however, it has been usual with British writers to enter into the consideration of the comparative value of the two lives, I shall, in this place, discuss the question, *Whether in any case whatever, the life of the fœtus in utero is of equal or greater value to itself, to its relations, and to the community, than the life of the mother.* This appears to me to be the more necessary, because Dr. Osborn has declared, that the loss of an unborn child is "so inconsiderable, as almost to exclude the possibility of comparison;" and, though he has pro-

mised to "endeavour to make a *fair* estimate between the situation of the child in utero and the unhappy parent," (p. 197.) has proceeded extremely unfairly, by exaggerating the value of the life of the parent, and depreciating that of the child.

To make a proper estimate of their respective value in the three-fold relation above-mentioned, it is necessary to consider a female, as liable to be in very different situations at the time she is in labour: For 1st. she may have no indisposition except that, which is the immediate effect of her labour-pains; she may be a wife and a mother of several children; she may be a daughter and a sister, more or less nearly related to a great number of persons, and dear to many others, as a valuable friend and acquaintance. The life of a female, in this situation, to herself, to her relations, friends, and to society, is unquestionably of much greater value than that of her infant; and nobody would, for a moment, hesitate to declare the loss of her child as of small consequence, compared with that of her own. 2dly. She may be free from any previous indisposition, and, therefore, if her labour can be accomplished without material injury, she may have reason to hope to enjoy her former perfect state of health;

but, her pelvis being ill formed, she neither has, nor can produce a living mature child, yet may be delivered by sacrificing the life of her child. The life of a female, so circumstanced, considered with respect to herself, and to her friends, will generally be considered as of much greater value than that of her child; and british accoucheurs have always, I believe, in this case, destroyed the child to preserve the mother's life;* though Dr. Denman has doubted whether, after her incapacity to bear a living child has been established by repeated labours, she ought not, in order to save her child, be exposed to the additional danger, arising from her undergoing the Cesarean Operation. The life of any one individual (except a distinguished character) may be considered as of no great importance to society; but, if we view this case upon a large scale, we shall perhaps be convinced, that the life of the *fœtus in utero* is of more value to *society* than that of the mother. For, supposing all the females of one generation inhabiting an island, unknown to, and, consequently, totally unconnected with any other nation, to have their *pelves* so extremely distorted as to render it impossible for any of them to be delivered, unless by employing the crotchet, in

* Except in two or three recent cases, wherein premature labour has been induced.

which case all the children would be destroyed, but most of the mothers preserved, or by performing the Cesarean Operation, in which case nearly all the children might be preserved, but many of the mothers would lose their lives, it is evident that this island would be completely depopulated on the death of the present generation, if the former mode of delivery were universally adopted; and that the population of the island might reasonably be expected to be supported, if the latter operation were, in every instance, had recourse to; and, therefore, the interests of that community would require, that the preference should be given to the Cesarean Section. 3dly. Besides being so unfortunately framed as to be unable to produce a living child (except by the Cesarean Operation), she may be extremely indisposed, and her complaints may be of an incurable nature; so that her life cannot reasonably be expected to be prolonged many weeks, or even days, if it were possible to accomplish her delivery, without adding to the danger of her situation. She may have been long confined to her bed, with scarcely power to move; she may be suffering, in an extreme degree, from the combined ills of disease and poverty, without any hope of improvement; she may be burthensome to herself, to her family, and to the public: She

may be desirous of being relieved from her accumulated sufferings by death. That such miserable wretches have actually gone to their full time, and fallen into labour, I must refer you to my *Defence* for proofs; and I must ask you and Dr. Osborn, whether, in these deplorable circumstances, the life of the mother is of incomparably greater value either to herself, to her family, or to the community? The answer most certainly ought to be given in the negative. Can it be desirable to her friends to see the life of such a poor distressed creature miserably protracted? Can it be wished by the community? Can it be desired by herself? Dr. Hunter has very properly observed, that "in calculating the chances of a life to be saved, we should take care to make a just estimate of the life itself. Thus, in more advanced age, the value of it is less in proportion; it is less too, in proportion as it is to be attended with pains or infirmities, or with whatever will diminish or destroy the enjoyments of life. Existence is so nearly equal to nothing, that its real value must arise from its connection with some kind of enjoyment; and where, upon the whole, there is none, life is either worth nothing or a positive evil." Yet Dr. Osborn, in making his fair estimate of the comparative value of the two lives,

has never once adverted to this wretched condition of the parturient female, although he must have known that such cases had actually occurred. And you have said, (*Detection* p. 87.) "I cannot help asking the reader, what must, according to his judgment, be the head or the heart of that man, who is capable of even hinting a doubt on the rival claims to life of the suffering mother, and the unextracted fœtus. What shall the life of the fœtus in utero be preferred to that of a woman attached to society *by innumerable links*, by multiplied ideas, associations, habits, and affections, which increase the desire of existence, and give her claims of resistless force to every chance of continuing it? The mind revolts at the thought; yet the amiable Dr." (Hull) "can indulge it with the greatest complacency." How erroneous and unjust all this declamatory language is, must appear to every one, who has read what precedes, and I shall only remark further concerning it, that the respect, due from you to the opinions of Drs. Clarke and Denman, ought to have repressed this *strange effusion*.

What Dr. Osborn has asserted, relative to the dreadful apprehensions of the mother, when the Cæsarean Operation is proposed, is ideal. A woman,

suffering under the unavailing and tormenting pains of labour, will frequently, perhaps generally submit, with cheerfulness, to any means proposed for her relief. Indeed, the Dr. tells us, that E. Sherwood "was extremely anxious to be delivered, and expressed her *willingness to undergo any operation*, however painful, for that purpose." Essays p. 245. What he has advanced with respect to her actual sufferance from undergoing this operation is equally unfounded in fact. E. Thompson declared, that she suffered much less pain from it than from delivery by the crotchet. And the Doctor, I think, ought first to have been a witness to this mode of delivery, before he had pronounced so positively concerning it.

Let us now see whether the Dr. has given a more correct statement of the condition of the fœtus in utero than of that of the mother. He tells us, that the loss of the unborn child "is extremely small to itself, to its parents, and to the community."* He not only deprives it of mental apprehension and sensibility, but he even denies it the possession of actual life,† and makes it a non-

* Essays p. 212.

† "I trust it will evidently appear that the loss of the principle of life to the child in utero, compared with the

entity.* That the foetus in the uterine state of existence, and even a child, some time after its birth, have no mental apprehension, will be readily conceded to the Dr.—They have neither a desire of life, nor a fear of death. But I have already shewn that the foetus possesses the power of sensation,† and have rendered it probable, that its feelings are more exquisite than at any subsequent period of its life. But granting the Dr's. assumption, that it possesses no power of sensation, I should be glad to know from him, in what way he can account for the circulation of the blood, and the motion of the limbs in the fetal state, without admitting it to be possessed of actual life. Absurd as the doctrine is, which I have just been considering, the following assertion will not, I think, be considered less extravagant: “A being in the uterine state of existence *sustains no immediate loss by the deprivation*

deprivation of actual life, and the attendant misery to the mother is so extremely small, that it is diminished almost to nothing.” Ibid. p. 198.

* “Surely the destruction of the living principle before birth, *the mere prevention of existence, or the deprivation of only a possibility of life* ought to be considered as a loss inexpressibly trivial.” Ibid. p. 201.

† Defence p. 158.

of the living principle, and can scarcely be said to incur any other positive injury." The Dr. afterwards says, "Having *proved* that the loss, which the child sustains by the deprivation of the principle of life, *is so extremely small, as almost to vanish to nothing*, and that its bodily sufferings, in the act of deprivation *are absolutely none*, it becomes proper next to inquire, what is the value of an unborn child to its parents, and to the community?"* He next tells us, that "Before the birth of the child, parental affection has not taken place—" "Disappointment of expected pleasure only, not the loss of an object of this powerful passion, or the loss of any actual enjoyment, is the sacrifice which the *unhappy* parent makes on this occasion."†—"It" (parental affection) "begins only with birth; and parents in general may, I think, *be literally said to suffer nothing by the loss of an unborn child!* In the case of wealthy and noble families, this loss is in particular instances acutely felt: but the sensation is not so truly pa-

* The Dr. admits, (Essays p. 205.) that the child's sufferings would be real and extreme from the same treatment after birth, viz. the use of the perforator and crotchet; and how he has ever, for a moment, been able to conceive that the child does not suffer equally before birth, is most extraordinary.

† Essays p. 208.

rental as we may suppose. It is not so much the loss of a *child* which they regret, as the want of an *heir* and *representative* : if sorrow be blended with disappointment, the latter still predominates.”*

The Dr. both denies and allows in the same passage, that the parent suffers much sorrow for the loss of an unborn child. And, as he admits that the loss is *acutely felt* by the *unhappy* parent, it is not very material to analyse her sorrow, and to endeavour to determine what proportion of it arises from parental affection ; what from the disappointment of expected pleasure only ; and what from the loss of an heir and representative ? It has been my lot to have extensive practice, as an accoucheur, amongst women in a very indigent situation of life, and, to the honour of the feelings of many of these poor creatures, I can bear ample testimony, that I have seen them extremely afflicted upon such occasions. And, if I have seen others express little concern, I can also affirm, that I have seen mothers apparently unconcerned for the loss of children, who have died some years after their birth.

“ To society likewise” says the Dr. “ the loss of any individual child must be exceedingly small,

* Essays p. 209.

when it is known by daily observation what great numbers of children are still-born, or die without such violence before birth, when it is likewise known, how very precarious is the chance of a child's living two years, but how most of all precarious is its arrival at that period of life, when it can be of any service to its fellow-creatures, or even itself participate in the enjoyments of the world."* The Dr. here seems to forget that a great proportion of fetuses, notwithstanding their chance is so very precarious, arrive at the state of manhood.

After a careful attention to the arguments, adduced by the Dr., I am decidedly of opinion, that the life of the fetus, viewed either with regard to itself, its parents, or society, is considerably greater than he is disposed to allow; and, though I am of opinion, that the life of a woman, who is healthy and free from deformity, is of much greater value than that of a child in utero, I think that the life of some parturient females is not, in any point of view, equal to that of the unborn child. This consideration, however, as I have before stated, does not at all influence our determination, with respect to the propriety of having recourse to the Cesarean Section as an operation of necessity.

* Essays p. 210.

You next affirm, that "All the experience of this country informs us, that the Cæsarean Section will prove fatal to the mother." Now, if your former proposition were true, what occasion was there to limit it here to the experience of this country? And granting, that it has been fatal, in every instance hitherto in this kingdom, this circumstance will not justify you or any one in saying, that it will, in every future case, prove fatal. Of the cases, in which it has already been practised in this country, I know of only one, which can be considered, as favourable to the operation. There may have been others, but of these the particular circumstances are not recorded, or, at least, I have not been fortunate enough to meet with them.

You advance afterwards, that "the whole question turns upon this single point, Whether the mother's life shall be sacrificed to save her child?" And yet you had just before admitted, that "the mother would die undelivered," if the Cæsarean Section were not performed. Admitting then this operation (which is not the case) to be invariably destructive, would it not be improper to say, that the mother's life is sacrificed to save her child, since her life is already forfeited, and must have been equally sacrificed, if no attempt

had been made to save her child.—“ Our attention,” you say, “ must be confined solely to the mother, as the consideration of saving her child cannot be entertained, without previously determining to destroy her.” This is a *very strange* assertion. For my part, I must declare that, in the two cases, in which I have performed the Cesarean Operation, I made no such previous determination, nor have I ever heard, or read of any accoucheur who did. The question, when properly stated, is, Whether it is not the duty of the surgeon, in every case, which will not admit of delivery by safer means, to have recourse to this operation rather than be a mere spectator, or desert the patient, and suffer her to perish with her offspring? And, in reply, I have no hesitation in declaring with Callisen “ *Omnino inde decet virum cordatum potius operationem, licet ambiguam, tempestive suscipere, quam matrem aut fœtum, aut utrumque certæ morti relinquere, eo magis quidem cum ipsa mater sæpissime quodvis auxilium anxie efflagitare soleat.*” Princip. Chir. P. II. § 400. From my own observation and reading, I must add, that I should perform it with reasonable expectation of saving the mother, if she were free from pre-existing disease, and neither exhausted by a protracted labour, nor en-

dangered by contusion or inflammation of the abdominal or pelvic viscera: And I know that several professional gentlemen, on whose judgment I have great reliance, concur with me in this opinion.

“The intention of employing professional assistance,” you say, “is to save and not to destroy.” Now the intention of using the crotchet is most certainly to *destroy the child*; and it has destroyed a much greater number of mothers in this kingdom than the Cesarean Operation. If, therefore, your curious reasoning be allowed to be just, it will prove the reverse of what you intended; for, instead of militating, in the least, against the Cesarean Operation, the intention of which is to save both mother and offspring, it will apply very forcibly against the use of the crotchet, an instrument employed *intentionally* and *avowedly* to destroy, and, to use your own words, *mutatis mutandis*, “the legislature has not thought fit to enact a statute of indemnity for this particular case, and the sixth commandment says Thou shalt do no MURDER. Both divine and human laws then prohibit the employment of means, which will be destructive of the child, though certainly preservative of its parent; and

to perform the operation of embryulcia upon a living child, would be to exercise a power in opposition to those omnipotent authorities."

The late Dr. Aitken of Edinburgh, has spoken of the use of the crotchet as a horrid (and 'tis to be feared sometimes *murderous*) expedient. ELEM. of Surgery p. 389. And hence it would appear, that he was as little acquainted with the signification of the term MURDER as yourself.

The performance of the Cesarean Operation, and the employment of the crotchet, although followed by the death of the parent, ought not to be considered as either *Murder* or *Manslaughter*. FELONIOUS HOMICIDE, to which these two crimes are referred, is defined to be "the killing of a human creature of any age or sex *without justification or excuse*. "BLACKSTONE'S COM. B. IV. Ch. 14. *Manslaughter* "is the unlawful killing of another without malice either express or implied." Ibid. *Murder* is "when a person of sound memory and discretion unlawfully killeth any reasonable creature in being and under the king's peace, *with malice afore thought, either express or implied*." Ibid. My intention, in laying these definitions before you, is to induce

you to read, what is written by the respectable author, whom I have quoted, upon the subject of homicide, and you will then be fully convinced of the shocking impropriety of your intimation, that an unsuccessful performance of the Cesarean Operation is MURDER. Indeed, if you insist upon it, that it is *murder*, you must allow, that the *excellent* directions, given by yourself for the performance of the operation,* “ can only be regarded as *directions for murdering secundum artem.*”†

“ To kill a child in its mother’s womb is now no murder, but a great misprision: but, if the child be born alive, and dieth by reason of the potion or bruises it received in the womb, it seems by the better opinion to be murder in such as administered or gave them. BLACKST. This, however, is not to be understood of destroying the life of a child, with the view of saving the life of its parent.

According to the same masterly writer “ There is one species of homicide *se defendendo*, where the party slain is equally innocent as he who occa-

* Reflections, &c. p. 34. † Mr. Tomlinson’s Letter to Mr. Ogden p. 9.

sions his death: and yet this homicide is also excusable from the great universal principle of self-preservation, which prompts every man to save his own life preferable to that of another, where one of them must inevitably perish. As, among others, in that case mentioned by Lord Bacon, where two persons being shipwrecked, and getting on the same plank, but finding it not able to save them both, one of them thrusts the other from it, whereby he is drowned. He, who thus preserves his own life at the expence of another man's, is excusable through unavoidable necessity, and the principle of self-defence; since their both remaining on the same weak plank is a mutual, though innocent, attempt upon, and an endangering of, each other's life." Upon this principle I will now undertake to shew, that the use of the crotchet where the child is alive, and the employment of the Cesarean Operation (granting it to be inevitably destructive of the life of the parent), when the child is known to be alive, are excusable according to our own laws.—Suppose that two persons A and B, in the act of drowning, are observed by a third person C, who humanely undertakes to save one of them, by swimming to his assistance. C seizes A, and, whilst he is attempting to bring him on shore, B

also lays hold of A. C informs A that he is unable to preserve both of them; and, A not having it in his power to disengage himself from B, C, convinced that it is better to save one of them, by drowning the other, than to leave them both to perish, himself forces B to quit his hold of A, and thus is enabled to preserve A, who would otherwise have inevitably perished as well as B. This conduct, on the part of C, though destructive of B, is certainly excusable, agreeably to the spirit of the above example, related by Lord Bacon. And, when an accoucheur is called to the assistance of a woman in labour, whose pelvis is unfortunately so contracted, that her life cannot be preserved, without destroying that of her child, as she is incapable of doing this herself, in such a manner, at least, as to save her own life, she can delegate this power to the accoucheur, who is most certainly excusable for discharging this painful office for her, by employing the perforator and crotchet. Again, if an accoucheur be called to another woman, whose pelvis is considerably more contracted than that in the former case, and find it impossible to preserve, or even prolong her life, by destroying that of the infant in her womb, then he would most certainly be as excusable for preserving the life of the child,

by performing the Cesarean Operation in this case, as he was for preserving the life of the mother, by performing the operation of embryulcia in the former case. The situation of the mother is not rendered more deplorable by the Cesarean Section. Her life is already forfeited, and it is by no means certain that it will be shortened, or the sum of her sufferings increased, by undergoing this operation. The life of the child is undoubtedly shortened by having its head opened with the perforator; but its situation cannot be considered as rendered worse by it; for, though its sufferings may thus, for a short time, be more exquisite, the sum of them might have been as great from being longer protracted, if no such operation had been performed.

You, in the next place, inform us that you have put "the question *more favourably* than experience warrants, for the signs, by which we must judge of the state of the child before birth are inconclusive of its real condition, and, consequently, should the mother's life be yielded to its intended preservation, disappointment might even precede her melancholy catastrophe in the extraction of a foetus already dead."—That the signs, by which we must judge of the state of the

child are not always to be depended upon, I am ready to concede. But, previously to the commencement of labour, and also after labour pains have come on, provided the *liquor amnii* be not discharged and the fœtus be strong, we may frequently obtain positive evidence of its life, by applying a hand to the abdomen, and feeling the motions of the fœtus. And we cannot be certain that the child is dead, when we do not perceive any motions of its limbs, because it may be merely quiescent, or the motions may not be sufficiently extensive to be distinctly felt. When the waters are recently discharged, and the motions of the child are feeble, or impeded by the necessary contraction of the uterus, it becomes much more difficult to determine concerning the life of the child in this way, as the action of the uterus may be mistaken for the spontaneous motion of the child. And, in the more advanced period of labour, this test is still less to be depended upon; but, if the *funis umbilicalis* or heart, or the arteries of the legs or arms of the child be within our reach, positive evidence of the life of the child may be obtained from their pulsation, and also from the motion of the limbs or lower jaw. It is true that in those cases of extreme deformity, which require the Cesarean Operation, we can

rarely have access to any of the larger arteries of the child. But the proportion of children, which die *in utero* in the last month of pregnancy, previously to, or soon after the commencement of labour, is not great ; if, therefore, when a case of extreme deformity occurs, we immediately ascertain the extent of it (which may be done as easily on the first examination as at any future period), and proceed without delay to perform the Cesarean Operation, where it is necessary, we shall rarely, I believe, experience the disappointment, arising from the extraction of a dead child. And, if the child should unfortunately be dead-born, the practice must still be considered as the most proper, that could have been adopted. No more blame would attach to the operator, in this case, than to a surgeon, who should lose the mother, after having destroyed her child by the crotchet, or after extracting her child per vaginam in a case of ruptured uterus, or who should lose a patient after any capital operation.

In justifying the employment of the Cesarean Operation, where the child is certainly known to be alive, I have, for the time, admitted even that it is necessarily destructive of the mother. This, however, is by no means the case. A great

number of well authenticated cases are recorded, which sufficiently evince that the chance of life to a woman, who cannot be delivered by the crotchet, is considerably greater by submitting to the Cesarean Operation than by being left to her fate. Hence it is, not only in my own opinion, but in the opinion of many celebrated writers on Surgery and Midwifery, the duty of an accoucheur to propose and to perform the Cesarean Operation when the child is believed, or even known to be dead, provided the mother cannot be delivered by the crotchet, and she have sufficient strength to support the immediate effects of the operation.

From this view of the subject it may be concluded, in direct opposition to what you have asserted, 1st. that, where the delivery cannot be accomplished by safer means, we ought to have recourse to the Cesarean Section;* and 2dly. that, “to deplore the miserable sufferings of the patient, and the insufficiency of art to relieve them,” *agreeably to your plain and precise rule*, without first proposing or performing this operation, is highly

* “Impossibile essendo ogni altro humano ajuto per evitare l'imminente certissima morte del feto, e della madre, si ricorre all' *Operazione Cesarea*.” — “Con questa operazione alle volte si salva uno di due, alle volte ambe due.” VESPA. Tratt. dell' Arte Ostetr. p. 46.

improper and censurable—We ought *first* to remove the insurmountable obstacle to the recovery of the patient by delivering her, and *afterwards*, as you have intimated, “the disposal of life must be left to HIM who gave it.

Before I proceed to the consideration of the numerous circumstances, supposed to indicate the Cesarean Section, I shall point out the various significations, assigned to the operation, by different writers on Surgery and Midwifery.

1: In its most restricted sense, the Cesarean Operation is defined to be *the extraction of a fetus and secundines through an incision, made into the abdomen and uterus of the mother*, and is synonymous with *Hysterotomy* (*Hysterotomia* vel *Hysterotomotocia*). This was the idea Rousset, and all the earlier writers had of the operation; although it is evident, that in some of the cases, related by them, the uterus was never wounded. And it is understood in this limited sense also by some modern writers.

2. After it became known, that a fetus, without ever having been contained in the uterus, might *ab origine* be situated either in the general cavity of the abdomen, or in one of the *Tubæ Fal-*

lopiantæ or *Ovaria*; when it was also known, that a fetus, originally situated in the uterus, might, from a rupture of this viscus or the *vagina*, escape into the general cavity of the abdomen, the name of Cesarean Section was extended to the operation, performed for the purpose of extracting children so situated, through an incision of the abdominal parietes simply, or continued into the Ovary or Fallopian Trumpet. And this operation, because the uterus was untouched, was more strictly named *Gastrotomy*.

3. It appears from Bauhin's Preface to his Translation of Rousset's work, that the operation of Embryulcia was considered by some writers, as a species of Cesarean Section. "*Altera Cæsura* (quæ potius *Extractio* dicenda) est Fœtus mortui ex matre viva, quæ priore" (viz. fœtus viventis ex matre mortua Cæsura) "non minus antiqua videtur, de qua breviter & quidem gravissime senex noster Hippocrates libro citato egit: ubi fœtus mortuus frustulatim educendus." &c. Heister* has also noticed the impropriety of considering embryulcia as a species of Cesarean Section, and has intimated, that, if the latter operation be understood to include embryulcia, the observation of

* Chir. P. II. Sect. V. Cap. 113.

Scipio Mercurii, relative to the frequency of the Cesarean birth in France, may be, in some measure, true. Having shewn, (Defence &c. p. 52—56.) that the observation of Scipio Mercurii has been misunderstood by Heister, and many succeeding writers, I shall only notice further in this place, with respect to Mercurii, that he by no means includes embryulcia in his notion of a *Parto Cesareo*, which he has not only accurately described, but illustrated by two engravings.*

4. By two of the latest French writers on Midwifery and Surgery, Lauverjat† and Saba-

* La Commare o Riccoglitrice p. 216 & 217.

† “Der kayserschnitt ist ein Einschnitt, welcher in den unterleib, in die gebärmutter, oder in irgend eines ihrer zugehörigen theile (Fallopischen Röhren oder Eyerstöcke) gemacht wird, um ein oder mehrere kinder heraus zu nehmen. Bald wird nur in eines dieser theile eingeschnitten, ein andermal in mehrere. Dieses nöthiget mich, zwey arten des Kayserschnittes festzusetzen. Die erste, welche ich den Mutterscheiden-Kayserschnitt (opération césarienne vaginale) nenne; wo man nur denjenigen theil der gebärmutter, welcher in die mutterscheide hervoraget, ja bisweilen nur in den rand des muttermundes einschneidet.”

“Die zweyte nenne ich den Unterleibs-Kayserschnitt (opération césarienne abdominale), welcher in zerschneidung der äussern theile des unterleibes und der gebärmutter &c. bestehet; dieser ist für die frauen unvermeidlich, deren

tier,* the signification of Cesarean Operation has been still further extended. In addition to the two operations, first defined and specified, which they have named *Abdominal Cesarean Operations*, they enumerate another species, which they name a *Vaginal Cesarean Operation*, viz. an incision made into the margin of the *Os Uteri*, or even the body of the uterus from the vagina, with the view of extracting a fetus through the natural passage.

5. It has happened in some instances, that the head, or other bulky part of a fetus, which is situated in the general cavity of the abdomen, has

becken fehlerhaft, und also dem kinde dem natürlichen ausgang nicht verstattet." Neue Meth. p. 16 & 17.

* On donne le nom d'opération césarienne à celle au moyen de laquelle on tire l'enfant de la matrice, par une incision pratiquée au ventre & aux parois de ce viscère. Ce nom s'applique aussi à l'incision que l'on fait au col de la matrice, pour faciliter la sortie ou l'extraction de l'enfant; mais ce genre d'opération est appelé *opération césarienne vaginale*, pour la distinguer d'avec la première, que l'on désigne sous le nom d'*opération césarienne abdominale*. On pourroit encore mettre au nombre des opérations césariennes l'incision, que l'on fait au ventre pour en extraire un enfant passé dans sa capacité, à raison d'une rupture à la matrice. Cette dernière opération est une espèce de gastrotomie." De la Médecine Opératoire. Tom. 1. p. 310.

been found placed between the vagina and the rectum. And it has been proposed, in such cases, to make an incision through the posterior part of the vagina, and extract the child through the os externum. This will constitute another species of Vaginal Cesarean Operation, and may be named a *Vaginal Gastrotomy*, to distinguish it from the former, which may be named a Vaginal Hysterotomy.—This operation has never yet been performed, I believe; but a fetus has been extracted through an ulcer of the vagina.

Hitherto, in speaking of the Cesarean Operation, I have used it, in its most common acceptance, as a generic term, including the two abdominal species of Hysterotomy and Gastrotomy: But hereafter, in order to avoid ambiguity, I shall take care to point out the particular species of operation, that is meant.

It may be stated in general terms, that every circumstance, *which can render delivery per naturales vias impracticable*, ought to be considered as requiring the Cesarean Operation. What these circumstances are, writers are not agreed: For, whilst some authors contend, that no case, except an extreme degree of deformity and con-

traction of the pelvis can render the operation necessary, others enumerate a great variety of cases, as indicating it.*

The cases, which I propose to examine, are
 1. Deformity of the pelvis. 2. Wounds of the uterus. 3. Rupture of the uterus or vagina. 4. Extra-uterine Conceptions. 5. Obliquity of the uterus. 6. *Hernia* of the uterus. 7. Tumours, &c. affecting the *os uteri* and *vagina*. 8. Strange or foreign bodies diminishing the capacity of the pelvis. 9. Convulsions or Epilepsy. 10. Preternatural position of the *fœtus*. And 11. Monstrous conformation of the *fœtus*.—Of these I shall consider the first more particularly, and the others only in a general way.

* “Die ursachen, welche den Kayserchnitt anzeigen, sind: die fehler der Beckenknochen, fehler der weichen theile, welche die geburtswege ausmachen. Die schwangerschaft ausser der Gebärmutter; die zerreissung oder irgend eine andere zufällige Oefnung der Gebärmutter, Muttertrompeten, oder Eyerstöcke; die Verschliessung des Muttermundes, fremde körper in der Gebärmutter, oder den benachbarten Theilen; gewisse Arten Brüche; Pulsadergeschwülste in der Mutterscheide; endlich die schiefe Lage der Gebärmutter, und Zuckungen, welche die Gebärenden während den Geburtswehen oder ihrer Annäherung befallen.” *Lauverjat's Neue Meth.* p. 17. & seq.

I. *Of Deformity of the Pelvis.*

Previously to considering the extreme degree of deformity and contraction, of which the pelvis is susceptible, compatibly with impregnation and complete utero-gestation, I shall beg leave to introduce a short description of the natural structure of the female pelvis; referring to *Monro*, *Leber*, and other anatomical writers for a more minute account of the figure, processes, foramina, &c. of the different bones, of which it is composed.

The pelvis is usually described as consisting of four bones, viz. 1st. the *os sacrum*, which constitutes its posterior and superior part, 2dly. the *os coccygis*, which constitutes its posterior and inferior part, 3dly. and 4thly. the two *ossa innominata*, constituting the whole of the anterior and lateral boundaries, and part of the posterior. See Pl. I. fig. 1.

The articulations of these bones admit of little or of no motion (except the articulation of the *os coccygis* with the *sacrum*), and are named *symphyses* or *synchondroses*.—The junction of the *ossa innominata* with each other anteriorly is named the *symphysis* or *synchondrosis pubis*. The junctions

of the *ossa innominata* posteriorly with the *os sacrum* are named the right and left *sacro-iliac symphyses* or *synchondroses*. The articulation of the base of the *os sacrum* with the lowest lumbar *vertebra* is named the *sacro-vertebral synchondrosis* or *symphysis*. And the articulation of the apex, or lower extremity of the *os sacrum* with the base of the *os coccygis* is named the *sacro-coccygean synchondrosis*, or the *symphysis* of the *coccyx*.

The *Os SACRUM* is of a triangular form, with its base above, and its apex below. It consists of five or six bones, or distinct ossifications, in young subjects; and, though it is completely formed into one bone in adults, the marks of the former divisions still remain on the forepart. Its anterior or interior face is concave; the posterior or exterior is convex.

The *Coccyx* is composed of three or four pieces or bones, in persons of middle age, which, in old subjects, become united into one bone. Its figure is inversely pyramidal. The internal surface is slightly concave; the external convex.

The *Ossa INNOMINATA* are of an irregular form, and are each composed of three distinct

bones, connected by cartilage in young subjects, which are named the *os ilium*, *os ischium*, and *os pubis*. These bones, taken separately, are all of them of an irregular figure.

The *Os Ilium* constitutes the highest lateral part of the pelvis. The uppermost portion is named the *wing* or *ala*, of which the internal surface, or *costa*, is concave; the external surface, or *dorsum*, is convex. The superior margin of the *ala ossis ilii* is named the spine or *crista*; its posterior extremity is named the posterior spinous process; its anterior extremity is named the superior and anterior spinous process; and a little below this is placed the anterior and inferior spinous process. The lower part of this bone contributes to the formation of the *acetabulum*.

The *Os Ischium* forms the inferior lateral part of the pelvis. It is divided into: 1. the *body*, which is placed superiorly and posteriorly, and constitutes nearly the lower half of the *acetabulum*. From its posterior part arises the spinous process, to which the internal sacro-sciatic ligament is attached. 2. The *tuberosity* or lower margin; and 3. the *branch*, the slender anterior portion, which

ascends and unites with the branch or *ramus* of the *os pubis*.

The *Os Pubis* is situated at the anterior part of the pelvis, and is divided into the *body* and *branch*. The posterior extremity of the *body*, or upper horizontal portion, contributes to the formation of the *acetabulum*, being united with the *os ilium* and *ischium*: the anterior extremity is articulated with the other *os pubis*, and forms the *symphysis*. Near this extremity is a small process, named the spine, or spinous process of the *os pubis*. The superior margin of the *os pubis* is named its *crista*. The *branch* descends more or less obliquely, and becomes united with the branch of the *os ischium*. The *foramen ovale*, on each side, is formed by the union of the two extremities of the *os pubis* with those of the *os ischium*.

The Sacro-ischiatic notch which is situated behind the *foramen ovale* on each side, is formed by the lowest portion of the *os ilium*, the *os sacrum*, and the *ischium*.

The *alæ* of the *ossa innominata* rise considerably above the base of the *os sacrum*, and sometimes as high as the top of the fourth lumbar ver-

tebra: Hence, the two lowest lumbar vertebræ might very properly be regarded as constituting the upper part of the posterior boundary of the pelvis; more especially as these two lumbar vertebræ, upon some occasions, very materially obstruct the passage of the child, whilst no impediment to delivery ever arises from the wings of the *ossa ilia*.

By some authors the pelvis is divided into the *Superior* or *Greater*, and the *Inferior* or *Smaller*; the *Linea Innominata* being considered as the common limit or boundary.

In treating of the female pelvis, in an obstetrical point of view, it is necessary to attend to its *figure, diameters, depth, inclination or oblique position, and axis*.

The figure of the whole pelvis is irregularly infundibuliform, or funnel-shaped, both the *border*, or upper expanding part, and the *tube*, or inferior contracted part, presenting unequal sides.

The *Border* or, as it sometimes named, the greater pelvis, is composed of the *alæ* of the *ossa*

ilia, and the fourth and fifth lumbar *vertebræ*. The *alæ* of the *ossa ilia* arise laterally, and somewhat posteriorly from the *linea innominata*, and pass obliquely upwards and outwards to the perpendicular height of about three inches in the middle, which is rather more elevated than either of the extremities. They are concave inwards, as stated above. The two lowest lumbar *vertebræ* are placed above the base of the *os sacrum*, and are somewhat convex or prominent forwards or inwards, considered either from above downwards, or from side to side. Anteriorly we find no bone elevated above the *symphysis pubis*.

The Tube,* or smaller pelvis (which is generally named the *cavity* of the pelvis) is very par-

* "Inferior maxime momentosa pelvis pars, quam pars inferior ossium Ilium, ossa Ischium & Pubis, Sacrum os & Coccyx componunt, spectari potest tanquam e tribus planis inclinatis a parte anteriore & lateralibus, & quarto excavato a parte posteriore constans, quibus cavi Pelvis interni figura hac parte determinatur.

"Generatim omnia hæc plana ab exteriori in interiorem partem descendendo modice convergunt. Primum planum, idque antèrius formatur ab interna parte ossium Pubis, qua hæc synchondrosi invicem junguntur, ejusque pars superior minorem curvaturam habet, quam inferior, sive majoris cir-

ticularly concerned in parturition, and therefore demands the greatest attention of the accoucheur. It is of unequal depth, being much deeper behind than at the sides, or before. The depth posteriorly, viz. from the base of the *os sacrum* to the *apex* of the *os coccygis*, varies from four to six inches. Laterally the depth is from three and a quarter to four inches, viz. from the *linea innominata* to the tuberosity of the *os ischium*. Anteriorly the depth is not greater than from one and a half to two inches, being merely the breadth of the *symphysis pubis*. If we consider the sacro-sciatic ligaments, as constituting a part of the

culi constituit segmentum, oppositum parti ossis sacri maxime prominenti, dum inferior pars, magis interiora versus spectans, respondet parti ossis Sacri introrsum quoque excavatæ, ita quidem ut os Sacrum magis in posteriora incurvetur, quam inferior ossium Pubis pars, adeoque distantia inter Sacrum & Pubis ossa sensim augeatur.

“ Lateralia bina plana constituuntur ab ossium Ilium ea parte, qua in Ischium transeunt, & pro maxima parte ab ossibus Ischium, inde ab origine horum ossium, donec in tubera utrimque desinant. Figuram hæc plana referunt quadrato-oblongam, ita ut a superiore parte, qua maxime a se invicem distant, nonnihil latiora sint, quam ab inferiore, ubi & quodammodo retorquentur, ita ut eorum pars inferior, in tuber desinens, cum superiore non jaceat in directum, sed magis in anteriora & exteriora vergat.—” *De Fremery. p. 3.*

boundary of the inferior aperture of the tubular part of the pelvis, the depth will be found to diminish more *gradually* from behind forwards.*

The *Entrance*, or *Superior Aperture* of the *tube*, or cavity of the pelvis, is of an irregularly elliptical form, or, more strictly, it may be considered as *reniform* or *kidney-shaped*, being narrower, from before to behind, in the middle than it is at some distance on each side, owing to the projection of the base of the *os sacrum* and the sacro-vertebral symphysis. See Plate II.

Of this aperture *four* diameters are usually enumerated by accoucheurs, namely: 1. The *antero-posterior* (A B), extending from the *symphysis pubis* to the middle of the base of the *os sacrum*. This is also named the *conjugate*, and *right*

* "In forming this cavity, no more bone appears to have been employed than was necessary to afford a sufficiently strong basis for the support of the body: and instead of the pelvis being an entire cylinder of bone, large vacuities are left in some places, and considerable projections of the bone in others, which make the figure in the skeleton extremely irregular. But these vacuities are all filled up in the living body with muscles, membrane, skin, &c. so as to form together a tolerably complete cylindrical tube." Bland's Obs.&c. p. 8. The vacuities in the *border* are filled up in the same way.

diameter. It measures from four to five inches.

2. The *Transverse* (C D), which extends from the *linea innominata* of one *os ilium* to the other, where they are at the greatest distance from each other, and measures generally from five inches to five and five-eighths. These two diameters intersect each other at right angles.

3. 4. The two *Oblique* (E F and G H), passing diagonally from the sacro-iliac *synchondrosis* of one side of the pelvis to that part on the opposite side, which corresponds with the anterior margin of the *acetabulum*.*

They are from four and a quarter to five inches and three-eighths in extent.—Besides the above four diameters, it is proper to attend to the distance betwixt the anterior extremity of the *os pubis* and the sacro-iliac *symphysis* of the same side (I K and L M), which measures from four inches to four and three-eighths. This diameter is particularly necessary to be stated in a distorted pelvis; because it assists very much in determining the figure of the *ossa innominata*; for, the greater the distance, the less is the pelvis forced inwards at its anterior part, and *vice versa*.† These diame-

* Plenck takes the oblique diameters from the sacro-iliac synchondroses to the middle of the *cristæ* of the *os pubis*.

* See De Fremery p. 79, 80.

ters, in deformed pelves, are not always found of the same extent on both sides, and these differences, being stated, contribute much to the illustration of the obliquity of the superior aperture of the pelvis.

All the diameters are, in some degree, affected or diminished by the *vagina* and other soft parts. The transverse diameter is diminished by the *psoæ* muscles, and more or less according to the greater or smaller bulk of them, especially when the pelvis is much distorted. The antero-posterior diameter is somewhat shortened by the *intestinum rectum* and the *urethra*. The oblique diameters are also slightly affected by the muscles, above-mentioned, at their posterior extremities; however this does not prevent them from being, when considered relatively to delivery, the largest diameters in a well formed pelvis.*

The *Outlet* or *Inferior Aperture* of the tube or cavity of the pelvis, is of a more irregular form than the *entrance*. Instead of all its parts being in the same plane, the line, which bounds it, is very much undulated or sinuous, owing to the unequal

* See Baudelocque § 79.

depth of the pelvis at different points, and the sacro-sciatic notches and arch of the *pubes*.

In this aperture, writers on midwifery have noticed four diameters, namely: 1. The *Antero-posterior* or *Conjugate*, which is taken from the point of the *coccyx* to the inferior margin of the *symphysis pubis*, and measures from four to four and a half inches. See Pl. III. A A. 2. The *Transverse*, extending from the tuberosity of one *os ischium* to the other (B B.) This diameter measures from four to five inches; but, when considered relatively to delivery, is less than the antero-posterior: For, since the apex of the *coccyx* yields to the head of the fetus, when impelled by the labour pains, and recedes about an inch backwards,* the antero-posterior diameter will be found to exceed the transverse, during the expulsion of the child, nearly as much at the in-

* As the *coccyx* is very moveable, and the antero-posterior diameter of the inferior aperture of the pelvis must vary, according as this bone is more or less repressed, Professor Bonn prefers taking it from the lowest point of the *os sacrum*, rather than from the *coccyx*. When this diameter is thus taken, it is generally equal to the transverse, each being, according to this author, four Rhinland inches and five-eighths. See De Frem. p. 8.

ferior, as it is exceeded by it at the superior aperture of the pelvis. 3. 4. The two oblique diameters (C C and D D) measure four inches or more. They are taken from the junction of the *rami* of the *os pubis* and *ischium* on one side, to the sacro-sciatic ligament on the other side.

Besides giving the admeasurement of the above diameters, it is necessary, more especially in describing a distorted pelvis, to state the distance from the tuberosity of the *os ischium* to the sacro-iliac *symphysis*, at their nearest points, on each side. In a well formed pelvis, the distance is found to be equal on both sides, and to measure about three and a half inches. In a distorted pelvis it is found, in some instances, much shorter on one side than the other.

The *Tube* or *Cavity*, comprehended betwixt the entrance and outlet, is a little larger, in all its diameters, than the apertures; which arises from the concavity of the inner surface of the *os sacrum*.

The inferior aperture is bounded anteriorly by what is named the arch of the *pubes*, which is found to vary in form, as well as in height and

width. This arch is formed by the branches of the *ossa pubis* and *ischia*, which are sometimes very nearly straight at their internal margins, and are placed at right angles to each other, (See Pl. I. fig. 1.) only a slight arch being formed just under the *symphysis*, owing to the thickness of the cartilages and ligaments of the articulation. Upon other occasions the margins of the *ossa pubis* and *ischia* are somewhat hollowed out, and form a more regular arch than in the former case, which commences at or near the tuberosities of the *ossa schia* (See Pl. III.); and sometimes the angle, at which the branches of the *ossa pubis* and *ischia* are placed, is obtuse, or greater than a right angle. The *height* of the arch of the pubes differs in different women, but is generally about two inches. The *width* of the arch at the base, or most distant part, is from three and a half to four inches, and gradually becomes narrower, till it measures only from one inch and a half to one and a quarter* immediately under the *symphysis pubis*.

* L'arcade du pubis ne mérite pas moins d'être bien connue que les parties, que nous venons de décrire ; puisque sa forme & ses dimensions peuvent également influer sur le mécanisme de l'accouchement. Cette arcade, arrondie dans sa partie supérieure, & large de quinze à vingt lignes seulement, s'augmente insensiblement en descendant, de sorte que

The *position* of the pelvis, with respect to the spine or axis of the trunk, is more or less oblique, or inclined; which is owing to the base of the os sacrum being joined with the last lumbar vertebra at an obtuse angle. The obliquity, or inclination of the superior aperture of the pelvis to the horizon, varies in different women. When a female is in a standing attitude, if we draw a line from the base of the *os sacrum* to the upper margin of the *symphysis pubis*, it will be found to descend about three inches at its anterior extremity, and this line, if produced to the horizon, will form with it an angle of from about forty-five* to fifty-five degrees. (See Plate IV. ABCD.) And the inferior margin of the *symphysis pubis* in the erect position of the body, is found to be situated about an inch lower than the point of

ses jambes sont écartées de plus de trois pouces & demi en enbas, même quatre pouces, si l'on prend pour base la ligne, qui passe pour le diamètre transversal de détroit inférieur: sa hauteur est d'environ deux pouces. Baudel. T. I. p. 45.

* "Cavi pelvis bene constitutæ in horizontem inclinatio ferre 45° solet esse, mensuranda optime linea ex extremo coccyge parallele ad diametrum rectam superiorem in horizontem ducta." De Frem. § 9.

the coccyx* (See Pl. IV. EF); although the depth of the pelvis posteriorly, is three times as great as it is anteriorly.

The *axis* of the *tube*, or as it is usually named, the cavity of the pelvis, is a curved line passing from the centre of the superior aperture, through the middle of the *tube*, to the centre of the inferior aperture.† A correct idea of this axis is most easily obtained by making a vertical section of a pelvis; and drawing two right lines, one from the middle of the base of the *os sacrum* to the superior margin of the *symphysis* of the *ossa pubis* (See Pl. IV. AB); and another from the point of the *os coccygis* to the inferior margin of the

* “Quodsi enim in virgine duo perpendiculara demittantur in idem planum horizontale, unum ab arcu ossium pubis, alterum ab extremo ossis coccygis: major ossis coccygis ab horizonte deprehenditur distantia, quam arcus ossium pubis, & quidem pollice quasi pedis & ultra. Quodsi porro triangulum figuretur rectangulum, cujus hypotenusa est diameter aperturæ pelvis inferioris, cathetus dictæ distantie differentia, ex legibus trigonometricis calculo instituto, angulus reperitur 72 circiter graduum.” Roed. El. Art. Obs. § 6.

† “Axis pelvis est linea imaginaria, quæ a medietate introitus ad medietatem exitus pergit, & lineam curvam in suo itinere describit.” Plenck El. Art. Obst. p. 15.

symphysis pubis (EF), and then drawing a curved line equidistant, in all its points, from the sides of the tube. See the dotted line HI. In this figure, which is taken from Baudelocque, the superior aperture is very considerably inclined to the horizon.

Many writers have erred, respecting the axis of the pelvis, from considering it as a right line.—Roederer considers a right line, which is perpendicular to the middle of the diameter of the *inferior* aperture, and passes through the middle of the cavity of the pelvis, as constituting its axis.* Camper, on the contrary, considers a right line, passing through the centre of the *superior* aperture of the pelvis to the extremity of the *coccyx*, as shewing the axis of the pelvis.† And Baudelocque‡ observes, that the axis of the pelvis is not easily determinable with precision, because the same right line cannot pass through

* “Linea, quæ in medium diametri aperturæ inferioris perpendicularis est, & per mediam cavitatem pelvis transit, *Axin Pelvis* sistit. Is in horizontem continuatus, retrorsum projectus, angulum acutum cum eodem intercipit.”

†Program. de Axi Pelvis in Opusc. Med. Gotting. 1763, 4to. P. I. p. 27. &c. ‡ L' Art des Acc. Tome I. p. 46. § 84.

the centres of the two apertures, and because the axis assigned cannot be the same exactly in every subject, nor in every attitude of the body. The axis of the superior aperture, according to this author, appears almost as much inclined from before backwards, as the aperture itself is inclined in a contrary direction, one of its extremities passing under the *umbilicus*, and the other towards the middle and inferior part of the *os sacrum*. And the axis of the inferior aperture, which, relatively to delivery, ought to be considered as passing through the centre of the opening of the *vagina*, dilated by the head of the child, is inclined so much from behind forwards, that its superior extremity traverses the bottom of the first false vertebra of the *sacrum*, and that it crosses the axis of the superior aperture, forming a very obtuse angle with it.

From the curvature of the *os sacrum*, and the oblique position of the cavity of the pelvis, the two apertures are not placed exactly opposite to each other; consequently, a right line, passing through the centre of the superior aperture, will not pass through the centre or axis of the inferior aperture: For if, upon the middle of the line A B,* extending from the centre of the base of

A A

* See Plate IV.

the *os sacrum* to the upper part of the *symphysis pubis*, we draw the perpendicular line G H, which will give the axis of the superior aperture of the pelvis, this line, if produced downwards to D, will pass out of the pelvis between the *coccyx* and *anus*, and will form an acute angle with the horizon (GDC). The point, however, of the inferior aperture of the pelvis, at which a line, shewing the axis of the superior aperture, will pass out, must vary a little according to the obliquity or inclination of each pelvis, and may therefore be anterior or posterior to the point, through which it passes in Plate IV. If the line G H be produced upwards, it will pass out of the trunk, under the *umbilicus* of an unimpregnated female, when she is in an erect position, and between the *umbilicus* and *scrobiculus cordis* at the end of utero-gestation.

Again, if, upon the middle of the line E F, extending from the extremity of the *coccyx* to the inferior margin of the *symphysis pubis*, we draw the perpendicular line I K, it will give the axis of the inferior aperture of the pelvis, and, if produced upwards to A, it will be found to touch the base of the *os sacrum*, and to intersect, in its course, the line G D, which shews the axis of the

superior aperture, at an obtuse angle.—Considered, however, relatively to delivery, this line does not give the axis of the inferior aperture exactly, because the point of the *coccyx* is so far repressed by the head of the fetus, that the antero-posterior diameter of the inferior aperture is then enlarged about an inch. And it is to be remembered that a line, shewing the axis of the inferior aperture of the pelvis, must vary in its direction according to the greater or less obliquity of the tube or cavity.

In a natural labour the curved line, mentioned above, as constituting the axis of the pelvis, is described by the centre of the child's head; and it is of great importance, that the direction of this line, as well as the dimensions* of the different diameters of the two apertures of the tubular part of the pelvis, be perfectly understood by accoucheurs, since we are to be guided by them, both

* When the dimensions of the pelvis are compared with those of the fetal cranium, they will be found fully adequate to the transmission of it, without much difficulty, when it enters the pelvis in a favourable position; and we accordingly find, that, in a natural labour, the obstacle to delivery always arises in part, and often wholly from the resistance of the *os internum* and *externum*.

in delivering with the hand, and in the application of instruments. It is to be observed, however, that the axis of the tube or cavity of the pelvis is liable to vary, in some degree, independently of deformity.

The dimensions of the pelvis are found to vary very considerably in different females, in consequence of their difference of stature. Of this I shall here adduce two remarkable instances, the former from the *Thesaurus Hovianus*; the latter from Prof. Bonn's *Musæum* at Amsterdam.

In the former pelvis, which is that of a woman of gigantic stature, the antero-posterior diameter of the *superior aperture* is five and a half inches; the transverse six and a quarter; the right and left oblique diameters each six inches. The antero-posterior diameter of the *inferior aperture* is five and a half inches; the transverse six and a quarter. The *os sacrum* is five inches in breadth, and four in height. The angle, included by the rami of the *ossa pubis*, is 90 degrees. Of the latter pelvis, which belonged to a dwarf only three feet high, the antero-posterior diameter of the *superior aperture* measures two inches, the transverse four and a quarter; the right and left ob-

lique diameters four inches each. The distance from the extremity of the right and left *os pubis* to the sacro-iliac *symphysis*, on the same side, measures three and a half inches. The antero-posterior diameter of the *inferior aperture* measures three inches and three-quarters; the transverse three and a quarter. The *os sacrum* is three inches and a quarter broad, and two inches and a half high. The angle, formed by the *rami* of the *ossa pubis*, is sixty-seven degrees and a half.*

The cavity of the pelvis is found to differ in form, as well as capacity, &c. independently of distortion, its superior aperture being more or less elliptical, and sometimes approaching nearly to the figure of the male pelvis.*

* This pelvis is somewhat deformed, being narrower from pubes to sacrum than it ought to have been; but it serves very well to illustrate the diminutive extreme of the pelvis. From the pelvis in the collection of Prof. Bonn it does not appear, that the dimensions are larger in the negress than in the European female.—See *De Frémery's Diss.*

† In the male pelvis the superior aperture is cordate or heart-shaped, rather than kidney-shaped, being obtusely three-cornered, and narrower in its transverse diameter than the female. At the inferior aperture the transverse diameter is smaller, the tuberosities of the *ossa ischia* being less distant;

More considerable deviations, however, take place in the form and capacity, &c. of the female pelvis, in consequence of accident and disease, than from original conformation. By these causes delivery is frequently rendered difficult, and sometimes physically impracticable *per vias naturales*. In some cases only one aperture, especially the superior, is affected; in others the dimensions of the whole pelvis are diminished.

The *Accidents* and *Injuries*, which obstruct parturition, by diminishing the capacity, and changing the form of the pelvis, are: 1. *Fractures* of the *ossa innominata*, or *os sacrum*. It was owing to a fracture of the former bones, that the excessive degree of deformity was induced in the pelvis of Jane Forster, upon whom Mr. Barlow performed the Cesarean Operation with success at Blackrod in this County. And Prof. Sandifort has given some engravings of pelves, which are very much deformed in consequence of the *os*

and the rami of the *ossa pubis* form an acute angle of about 55 degrees. The antero-posterior diameter is also shorter than in the female. The *os sacrum* is narrower from side to side, and less concave internally. The *alæ* of the *ossa ilia* are less expanded.—For some further peculiarities of the male pelvis see Roederer § 7. and Soemmering's *Tab. Sceleti Femin.*

sacrum having been fractured, and the pieces having united at almost a right angle.* 2. *Dislocation* of one or both thigh bones. The head of the *os femoris*, when not reduced, pressing necessarily upon a different part of the pelvis, has been found to induce a very material change in the form of its apertures; this change is different, according to the situation, occupied by the dislocated extremity. When the *ossa femorum* are dislocated upwards and backwards, by pressing upon the *dorsum* of each *os ilium*, they may shorten the transverse diameter of the superior aperture; and elongate the transverse diameter of the inferior aperture, by increasing the angle, at which the *rami* of the *ossa pubis* recede from each other. (See Pl. I. fig. 2, in which the transverse diameter of the inferior aperture is increased to six inches. This figure is taken from the sixty-fourth Tab. of Sandifort's *Musæum Anatomicum*). When the femur is dislocated downwards, the pressure being made upon the inferior part of the pelvis, the deformity is of the contrary kind, the lower part becoming contracted, and the upper part enlarged. For the bones of the pelvis seem to be, in some measure, moveable about the antero-

* Mus. Anat. Vol. II. Tab. 45. f. 5, 6, 7.

posterior diameter of the superior aperture, as about an axis ; so that in proportion as the parts, situated below this axis, are further removed from each other, the parts, placed above, approach each other, and *vice versa*; thus, the greater the distance is between the superior margins of the *ossa ilia*, the smaller is the distance between the tuberosities of the *ossa ischia*.* The dislocation of the *ossa femorum* may be expected to produce a greater effect in young subjects, as the bones of the pelvis will then yield more to the super-incumbent pressure, than in old ones.

The *diseases*, which affect the dimensions of the pelvis, are *Exostosis*, *Rachitis*, and *Malacosteon*.

1. *Exostosis* may affect a greater or less portion of any of the bones of the pelvis, and, consequently, may diminish any of the diameters. When of considerable extent, it may render the crotchet necessary ; and, perhaps, in some cases the Cesarean Operation. It is, however, a less frequent cause of contracted pelvis than the two following.

2. *Rachitis* is a disease of infancy, in which

* See De Fremery p. 7.

the bones, from want of a sufficient deposit of the phosphate of lime, become soft, yielding, and distorted. Upon some occasions a great number of the bones is evidently affected by it; at other times the pelvis is the only part, which suffers materially and permanently: but, unfortunately, it is upon the bones composing the pelvis, that its effects are found to be the most injurious. When a female infant becomes affected by Rickets, such a degree of deformity may very soon be induced as will render her incapable of ever bearing a living child; hence arises the very great necessity of an early attention to this disease in females. It is not sufficient to cure the disease; it should be cured *speedily*, and all deformity of the pelvis obviated, if possible; otherwise its effects may lead hereafter to the destruction of many children, and repeatedly endanger the life of the mother.

The distortion or contraction, induced in the pelvis in consequence of this disease, may be very slight; or it may be so extensive as to render delivery *per vias naturales* impossible; and it may be of, perhaps, every intermediate degree. Whether it has, in any instance, been so great as to occasion death by compressing the

urethra and *rectum*, and thereby preventing the natural evacuations, I am not able to determine: But, from the degree of deformity, sometimes observed in the adult, this fatal termination of ricketts does not seem altogether improbable.

Having, in a former publication,* pointed out the different kinds of deformity of the pelvis, induced by *Rachitis* and *Malacosteon*, and having also endeavoured to explain in what manner this striking diversity of figure is effected, I shall not enter again fully into the consideration of this subject; but shall, by way of illustrating the different species of deformity still further, give a full description of two pelves, so extremely distorted from *Rachitis*, and *Malacosteon* as to have rendered the Cesarean Section indispensably necessary to the delivery of the two females, to whom they belonged.

The ricketty pelvis, which I shall first describe, is that of Martha Rhodes, upon whom Mr. Thompson performed the Cesarean Operation in London, in the year 1799, and is admirably figured in the *Med. Obs. and Inq.* Vol. IV. Pl. II. III. and IV.

* Defence of the Cesarean Operation p: 193 & seq.

The greatest distance from the *crista* of one *os ilium* to the other measures 10 inches.

At the superior aperture. The antero-posterior diameter, taken from *pubes* to *sacrum* (See Pl. V. f. 2. A B), measures $\frac{7}{8}$ of an inch. In the widest part, from before to behind on the right side C D, it measures $1\frac{6}{10}$ inch; on the left side E F, $1\frac{7}{10}$ inch. The transverse diameter G H measures nearly $5\frac{1}{2}$ inches.

From the extremity of the right *os pubis*, at the symphysis, to the right sacro-iliac synchondrosis, the distance measures $2\frac{8}{10}$ inches. From the anterior extremity of the left *os pubis* to the left sacro-iliac synchondrosis, the distance is $2\frac{9}{10}$ inches.

At the inferior aperture. The antero-posterior diameter, from the coccyx to the under margin of the symphysis pubis, measures $2\frac{4}{10}$ inches. The transverse diameter, taken from the tuberosity of one *os ischium* to the other, measures $4\frac{6}{10}$ inches.

The distance from the right sacro-iliac synchondrosis to the tuberosity of the right *os ischium* is $3\frac{1}{2}$ inches. The distance from the left

sacro-iliac synchondrosis to the tuberosity of the left os ischium measures $3\frac{1}{2}$ inches.

The nearest points of the *acetabula* are $5\frac{3}{10}$ inches asunder. The distance from the spinous process of one *os ischium* to the other measures $4\frac{6}{10}$ inches. The arch of the *ossa pubis* is wide at the base, and only $1\frac{6}{8}$ inch in height. The angle, included by the *rami* of the *ossa pubis*, is about 110° . The perpendicular height or depth of the posterior part of the pelvis is nearly $3\frac{1}{2}$ inches; the depth of the lateral part is 3 inches; the depth of the *symphysis pubis* is $1\frac{3}{10}$ inch. The anterior part of the pelvis is much flatter, or less prominent than natural. The lumbar vertebræ are curved forwards, but not inclined to the right or left side of the pelvis.

The superior aperture of the pelvis, just described,* is of a regular kind; I am therefore induced to notice the superior aperture of another ricketty pelvis, which is of a more irregular form, the left side being much more contracted than the right, from before backwards, and the centre of

* I have given this description from a cast in Mr. White's collection, in which there is a cast of another pelvis very similar to this, but a little larger in its dimensions.

the *os sacrum* being forced considerably nearer to the left side of the pelvis. This aperture is figured in Plate VI., and the dimensions of the different diameters are there expressed ; and I shall observe further, with respect to this pelvis, of which also Mr. White has a cast, that the Lumbar Vertebrae are affected with *scoliosis*, being curved first very much towards the left side, and afterwards to the right.*—The *ala* of the left *Os Ilium* stands

* The curvature of the spine is distinguished by different appellations, according to its different directions. When the curvature takes place *backwards*, it is named *cyphosis* : When laterally, it is named *scoliosis* : And when forwards, it is named *lordosis*. See Callisen § 1025. Of these different species of curvature *scoliosis*, which was present in this case, is, perhaps, the most frequent. Its effects in rendering the superior aperture of a ricketty pelvis oblique or irregular, are admirably explained by De Fremery in the Dissertation, to which I have frequently referred. “ In sana et bene conformata spina totius trunci gravitas, perpendiculariter in Sacri ossis partem superiorem agens, hoc os æqualiter ab omni parte antrosum trudere conatur. Verum in Scoliosi distorta spina res ita se non habet, quod ut in exemplo clarius elucescat, ponamus, spinam in lumbis sinistrorsum esse inflexam, videamusque, quid in posito hoc casu evenire debeat. Ut æquilibrium hic conservet homo, conabitur certe corpus quantumpotè dextrorsum projicere, hac autem projectione, linea gravitatis, antea per axin ossis sacri transiens, nunc in partem ejusdem ossis superiorem dextram incidet, atque hæc pars

perfectly erect, and is only $1\frac{1}{2}$ inch distant, in the middle, from the top of the fourth lumbar *vertebra*.

—The *ala* of the right *Os Ilium* expands, and, in the middle, is $3\frac{1}{2}$ inches distant from the top of the fourth lumbar *vertebra*.—The *acetabula*, at their least distant points, are $4\frac{7}{16}$ inches asunder.

—The *tubera* of the *Ossa Ischia* are 7 inches distant; the spinous processes of the same bones are nearly $6\frac{1}{2}$ inches distant.—The *Os Sacrum*, on its *internal* surface, has scarcely any concavity, and

hac de caussa magis quam sinistra pressa, magis quoque antrosum urgebitur, antrosum autem urgeri haud poterit, quin obliquum ratione pelvis situm Sacrum os occupet, quo situ ipsa apertura superior pelvis minoris obliqua fiet & irregularis, dum pars dextra hujus aperturæ capacitatem majorem quam sinistra nascetur, quum scilicet diameter obliqua superior illa, quæ a conjunctione sacro-iliaca dextra ad oppositum ossium pubis ramum ducitur, necessario minor evadet, quam altera diameter obliqua. Cum autem in Scoliosi soleat spina in dorso versus oppositam partem, quam in lumbis flectitur, incurvari, cum iterum versus eandem partem & in lumbis & in collo curvari soleat, cumque directio actionis gravitatis spinæ in Sacrum potissimum a situ vertebrarum lumbalium spinæ pendere videtur, sequitur, in genere statui posse, pelvis capacitatem a Scoliosi ita reddi obliquam, ut illa pars aperturæ ejusdem superioris, quæ ultimæ spinæ in lumbis curvaturæ est opposita, sit capacior." § 32. It is to be observed, however, that the pelvis is not necessarily and always distorted, when the spine is affected by *scoliosis*.

is 5 inches in depth or height. The *coccyx* is wanting. The distance, from the anterior extremity of the *os pubis* to the sacro-iliac *synchondrosis* at the right side of the superior aperture, is $2\frac{8}{10}$ inches; at the left side $3\frac{3}{10}$. The distance from the tuberosity of the right *os ischium* to the right sacro-iliac *synchondrosis*, at their nearest points, is $3\frac{2}{10}$ inches; from the tuberosity of the left *os ischium* to the left sacro-iliac *synchondrosis* is $3\frac{5}{10}$ inches. The perpendicular height of the arch of the pubes, taken from the tuberosities of the *ossa ischia*, is only one inch. The angle, included by the *rami* of the *ossa pubis*, is about 150° .

This pelvis, though materially different from the pelvis of Eliz. Sherwood, as described by Dr. Osborn, approaches the nearest to it, of any I have yet examined or seen figured.

In some few instances of ricketty pelves the *tubera* of the *ossa ischia* are pressed nearer to each other, and diminish the transverse diameter of the inferior aperture. This deviation seems to be produced from the *ossa ischia* being more than proportionally affected by the disease; from the child's sitting much, and resting upon one *os ischium* more than the other; and sometimes, perhaps

from its sitting in a perforated chair, a situation, in which the rickety children of poor persons are too generally placed. An horizontal position is the most proper for rickety females, till the complaint is removed. I shall only observe further with respect to the effect, which a sitting posture has in determining the peculiar character of the rickety deformity of the pelvis, that the weight of the head, trunk, and superior extremities, being in this attitude, sustained by the tuberosities of the *ossa ischia*, and the *os sacrum* being united with the last lumbar vertebra at an obtuse angle, these bones give way forwards at their articulation; the angle becomes more and more acute; and the bones of the pubes are, at the same time, forced backwards; consequently the antero-posterior diameter becomes insensibly more and more contracted.

3. *Malacosteon* denotes that softness of the bones, which takes place in the adult state. This disease is sometimes (though rarely) very general, affecting almost every bone in the body, as in the two very remarkable cases of Madame Supiot,*

* See Bromfield's Surgery Vol. II. p. 30—39. It may be proper to mention that, in the pelvis of Mad. Supiot, the deformity is of a very singular kind. It was not induced in a

and James Stevenson.* Upon other occasions it is found to affect the bones of the pelvis only, or the spine and pelvis together; at least its effect upon the other bones in these cases is not evident. This partial affection is not an uncommon occurrence,† and the degree of deformity or contraction of the pelvis, induced in consequence of it, is frequently found to be much greater than has ever been observed to be occasioned by Ricketts. The degree of softness, which takes place, when this disease affects the pelvis and spine, is very various; sometimes a very small portion only of the phosphate of lime ap-

standing attitude from the pressure of the heads of the *ossa femorum* upon the *acetabula*; for the heads of these bones, having in part slid from their sockets, this was rendered impossible. The *tubera* of the *ossa ischia* are removed to the greatest possible distance from each other, and the angle, at which the *ossa pubis* are joined, is as much greater than the natural, as is possible. See Pl. I. fig. 3.

* See Med. Obs. and Inq. Vol. V. p. 259.

† Seven cases of such extreme deformity of the pelvis from *Malacosteon*, as to require the performance of the Cesarean Operation, have occurred in Manchester, within the remembrance of the present practitioners; and one has occurred within this month, where the pelvis is become so contracted as to render the crotchet necessary.

c c

pears to have been removed, the bones retaining their usual appearance, and nearly their usual hardness; upon other occasions, the bones become of a cartilaginous consistence, or even softer, and will admit of being cut with a knife; as in the case of Mary Ordway, which occurred to Mr. Welchman, and the case of Mrs. E. Forster, which is related by Dr. Cooper.

Having attempted, in another place, to explain why the pelves, which are distorted in consequence of Malacosteon, so constantly assume the triangular* form, I shall proceed to lay before you the particular description of a pelvis, which occurred to yourself, viz. that of Eliz. Thompson. It will easily be conceived by you, that this poor woman's pelvis might have been successively of all the possible intermediate degrees of contraction betwixt the natural state, and the extreme degree of distortion that had taken place at her death, and that, if she had lived some time longer, the bones of the pelvis might have been still further approximated, and perhaps have oc-

* The sides of the triangle are all pressed inwards, and more or less convex. The only exception, I have met with, is the case of Mad. Supiot.

casioned death by compressing the pelvic viscera, and thus preventing the fecal and urinary discharges. It is remarkable, that this woman, though her pelvis was so extremely distorted, was still able to walk;* and she enjoyed a better state of health than some others, in whom the bones of the pelvis were considerably less approximated.

The pelvis of this patient was not nearly so soft as has sometimes been observed. It still had a considerable degree of bony firmness. The *Ossa Innominata* at their sacro-iliac *synchondroses*, and at the *symphysis pubis*, before the pelvis was dried, admitted of a slight degree of motion.—

* As the deformity, induced by this hitherto incurable disease, is gradual and progressive, it would be proper, as soon as it is ascertained, to recommend to the patient the use of crutches, long before they are become absolutely necessary for her support in walking. By the use of these the pressure of the ossa femorum will be much lessened, and that degree of deformity, which will render the Cesarean Section indispensable, may probably be obviated either altogether, or till she has passed the period of child-bearing. A recumbent posture ought also to be enjoined with the same view. The medical treatment of this disease I cannot consider in this place.

The distance from the *crista* of one *Os Ilium* to the other, at their most remote points, measures $10\frac{1}{2}$ inches.

The *alæ* of both *ossa ilia* are very much bent, and on the left side the curvature is so great, that it measures only two inches from the anterior and inferior spinous process to the opposite posterior point. The *Lumbar Vertebrae* project forwards or inwards, and make a considerable curve to the left side of the pelvis. (See Pl. VII. fig. 1.) "The distance from the lower part of the second lumbar *vertebra* to the anterior part of the spine of the *os ilium*, on the left side, is two inches. The distance from the lowest part of the second *lumbar vertebra* to the anterior part of the spine of the *os ilium*, on the right side, is five inches."

"SUPERIOR APERTURE. The conjugate or antero-posterior diameter, from the *symphysis pubis* to the upper edge of the last *lumbar vertebra* AA (see the dotted outline fig. 2.), is one inch and a half.—This diameter is not taken from the *os sacrum*, or its junction with the last *lumbar vertebra*, because the point of their junction is so much sunk into the pelvis, that the place, it should have occupied, is represented by the" junction of the

fourth and "fifth lumbar *vertebra*. The transverse diameter G G measures $4\frac{5}{8}$ inches. It is taken from one *sacro-iliac symphysis* to the other. The distance of the point of this aperture, which is opposite to the anterior part of the right *acetabulum*, from the *lumbar vertebra* C C, is only half an inch. The distance from that part of this aperture, which corresponds with the posterior part of the right *acetabulum*, to the *os sacrum* D D, is three-fourths of an inch. The distance of the point, corresponding with the anterior part of the left *acetabulum*, from the *lumbar vertebra*, in the direction E E, is five-eighths of an inch. The distance of the point of this aperture, opposite to the posterior part of the left *acetabulum*, from the *os sacrum*, in the direction F F, is three-fourths of an inch. The distance of one *os pubis* from the other, in the points marked B B, is seven-eighths of an inch. The distance from the right *sacro-iliac symphysis* to the *symphysis pubis* G A is $3\frac{3}{4}$ inches. The distance from the right *sacro-iliac symphysis* to the left *os pubis* G B is $3\frac{3}{8}$ inches. The distance from the left *sacro-iliac symphysis* to the *symphysis pubis* G A is $3\frac{5}{8}$ inches. The distance from the left *sacro-iliac symphysis* to the right *os pubis* G B is $3\frac{1}{4}$ inches. The largest circle, that

can be formed in any part of the superior aperture, does not exceed in diameter one inch."

"INFERIOR APERTURE. The distance from one *ramus ossis ischii* to the other, where they are united with the *rami ossium pubis*, measures only half an inch. The distance from the tuberosity of one *os ischium* to the other measures one inch and two-tenths. The conjugate or antero-posterior diameter, taken from the *symphysis pubis* to the point of the *os coccygis* is three inches."*

The angle, included by the *rami* of the *ossa pubis*, is very acute, viz. an angle of about 20 degrees. The perpendicular height from the *tubera* of the *ossa ischia* to the inferior margin of the *symphysis pubis* is $2\frac{1}{2}$ inches. The perpendicular height of the *symphysis pubis* is $1\frac{1}{2}$ inch. The tuberosity of the left *os ischium* advances forwards, beyond that of the right, about $\frac{6}{10}$ of an inch, and the whole of the *rami ossis pubis* and *ischii* on the left side, projects beyond those of the right. The perpendicular height of the *os sacrum* and *coccyx* is $2\frac{1}{4}$ inches only, the *os sacrum* being bent so as to form a very acute angle. The *acetabula*, at their nearest

* See Mr. Wood's Account of the case, in the Appendix to the 5th Vol. of the Memoirs of the Med. Society.

points, are only three inches distant. The *symphysis pubis* is much more prominent than natural. The upper margin of the *symphysis pubis* is situated as high as the bottom of the fourth lumbar *vertebra*.*—The *pelves* of Eliz. Thompson, Eliz. Hutchinson, and Isabel Redman, exhibit three striking varieties of the triangular form, induced in the superior aperture by *Malacosteon*,† the bo-

* It is principally owing to the continued action of the Recti muscles of the Abdomen, that the anterior part of the pelvis is thus elevated, and its tubular part or cavity rendered more perpendicular than in the natural state.

† The inferior aperture of the pelvis of a poor woman, wife of John Mercer, of Cowell-fold, near Blackburn, was so much distorted in consequence of this disease, that, when examined by Mr. Barlow on the 22d of Feb. 1794, more than a year before her death, the *rami* of the *ossa ischia*, at their junction with the *rami* of the *ossa pubis*, actually overlapped each other, leaving a very narrow opening under the *symphysis pubis* into the *vagina*, and another somewhat wider aperture below, towards the tuberosities of the *ossa ischia*. This woman lived to the age of 39 years. She bore nine children; and four of them after her lameness began, which she attributed to an injury received in her fifth labour. Eight of her labours were natural, and in some of these I attended her. In her last labour, on the 29th of April, 1792, she was attended by Mr. Barlow, when he lived with me as a pupil. The pelvis was, at that time, very much distorted, and he de-

dies of the *ossa pubis* being approximated in different degrees in each of these cases.

Whether in any of the cases, wherein the Cæsarean Section has been had recourse to in Great Britain, the delivery could have been accomplished by any means with more safety to the mother, I am not able to determine : because we are not in possession of the dimensions of the pelvis in all of them. But, in every instance, where the dimensions have been given, the degree of contraction was greater than in the pelvis of Eliz. Sherwood, if this be determined by the size of the

livered her with the crotchet. He is certain that the bones of the pelvis gave way a little, during the extraction of the child's head ; a circumstance, which he has since observed in another case of *Malacosteon*, where he found it necessary to deliver by turning the child. This poor woman conceived, after she had been delivered by the crotchet, but miscarried in the fifth month. I saw this poor creature, some months before her death ; she was then unable to stand, although none of her bones, except those of the pelvis and spine appeared to be affected ; but I am not able to state what further change had taken place in the pelvis, as I was not permitted to examine her *per vaginam*. I have lately learnt, that, at the time of her death, her body was bent forwards so much, that her head and breast were almost in contact with her knees, and that it was with difficulty, she could be put into her coffin.

largest circle that can be formed in the superior aperture, which seems to me to be the most proper mode of ascertaining their capacity. In the superior aperture of Sherwood's pelvis a circle may be formed equal to $1\frac{3}{4}$ inch ; but we do not know that in any of the pelves, belonging to the poor women, who have undergone the Cesarean Operation in Great Britain, a circle of the same size can be formed. We know that in the pelvis, of which I have just given a description, the largest circle, that can be formed in any part of the superior aperture, does not exceed one inch. It would therefore be by no means fair to infer, because Dr. Osborn asserts that he has delivered a woman by the crotchet, without destroying her, whose pelvis, at the superior aperture, would admit of the formation of a circle with a diameter of $1\frac{3}{4}$ inches, that he can deliver a woman, with safety by the same instrument, whose pelvis, in the widest part of the superior aperture, will not permit the formation of a circle, the diameter of which is greater than one inch. Yet such is the inference, or assumption of an anonymous writer, as will appear from the two following extracts. “ The *arguments* and authorities, produced by Mr. Simmons, appear to be decisive of the question in his favour. Of these authorities that of Dr. Osborn

is the most remarkable, and a case of *extreme* distortion, in which his skill delivered the patient successfully by the common practice, *authorizes* Mr. Simmons's general conclusion, tha the Cesarean Operation is now superseded by safer means."*—"The question is now decided against the operation."† This *opinion* and subsequent *decision* I know, from actual experiments, to be erroneous. And to convince this writer, that they are considered in the same light by a person, very capable of judging of the point in question, I shall adduce two extracts from Dr. John Sims's Letter, inserted in the Med. and Physical Journal for December 1799. "Having then, I trust, brought the business fairly to this issue, that as cases have occurred, and may occur again, which allow of *no other possible way of delivery* than the Cæsarean Operation, and that, as this operation affords an opportunity of preserving the child, and though a very remote, yet the only, chance of saving the life of the mother also, therefore the operation may be justifiable and necessary."—"It has not appeared to me necessary to prove that such cases have occurred, because in the pa-

* A Monthly Reviewer for September, 1799, Art. 8.

† Ibid. for October, 1799, Art. 46.

per, published in the last number of the Journal, Mr. Simmons seems to allow this. But the *Monthly Reviewers*, in their criticism on another publication of his, Art. 8. for September, say, that they coincide with him in opinion, that this operation is now superseded by safer means, alluding to the remarkable case, published by Dr. Osborn. Where these *safer* means can be applied, I perfectly agree with this opinion; but surely, in such a case as that of Eliz. Thompson, where no part of the child could be touched with a finger, even when the whole hand was introduced into the vagina, *no one acquainted with such operations can believe, that the greatest skill could, by any known means, have extracted a full grown child through such a pelvis.* I have by me casts of the pelvis of two subjects, upon whom the operation was performed in London, a mere inspection of which will lead to the same conclusion." The real pelvis of Eliz. Thompson has been seen by several celebrated accoucheurs and anatomists in London, who were unanimously of opinion, as I am informed, that the Cesarean Section was proper and necessary in this case. It was examined by Dr. Clarke also, Dr. Osborn's colleague, who gave a similar opinion, as I am told by Mr. Gibson. What are Dr. Osborn's sen-

timents, respecting this case, I have yet to learn, In a case, circumstanced like this of Eliz. Thompson, no attempt could be made to deliver, with any degree of propriety; the very first step of the operation could not be made. For what accoucheur, in possession of his reason, would think of introducing a perforator, or a crotchet, where he knew that he could not direct them to the head of the child?

Having fully proved from a case, which has occurred to yourself, that such a degree of deformity of the pelvis may take place as will present an insurmountable obstacle to delivery *per vias naturales*, and, consequently, render hysterotomy necessary, I shall now proceed to the consideration of the other circumstances, which have been supposed to indicate the Cesarean Section, deferring the consideration of the following question, What are the largest dimensions of the pelvis, in which hysterotomy is necessary? till I come to the examination of Dr. Osborn's directions, relative to Embryulcia.

II: *Of Wounds of the Uterus.*

Independently of deformity of the pelvis, hysterotomy is necessary, when the uterus is wounded

towards the end of pregnancy, provided the wound be extensive, and penetrate into its cavity: For, after such an accident, unless the womb be speedily evacuated, and allowed to contract, there is great danger of a fatal hemorrhage: Or, if labour-pains should come on, the wound of the uterus may be expected to become enlarged, and the fetus forced into the general cavity of the abdomen. Of the successful performance of gastrotomy and hysterotomy, under such circumstances, I have given the histories of two cases, in my *Defence of the Cesarean Operation*. (p.80. &c.)

It has unfortunately happened, that, from pregnancy's being mistaken for *ascites*, a trocar has been pushed into the uterus; and it is deserving of enquiry, What is the most eligible mode of proceeding in such cases? In discussing this question, it is of importance to be known, whether the trocar has passed completely through the uterine parietes or not, as a diversity of practice may be required in these two cases. For, 1st. where the instrument has only produced a superficial wound, or has not passed through the uterine *parietes*, we may have great reason to hope, that the application of an adhesive plaister, and an antiphlogistic regimen, will prove sufficient for the re-establish-

ment of the patient's health, unless a violent hemorrhage should ensue. 2dly. Where the instrument has passed entirely through the parietes of the uterus, which may be generally known from the discharge of the *liquor amnii*,* we cannot reasonably entertain the same expectations of a favourable termination of the case. A strict antiphlogistic regimen may, however, very properly be enjoined, in order to give a chance for the healing of the wound in the uterus, before the accession of labour. And, if labour pains should unfortunately supervene immediately, or before the uterine wound be healed, we ought, in my opinion at least, to deliver with the forceps or vectis, as soon as it can be done without rashness, in order to prevent the uterus from being ruptured by the violence of its own contractions. But, if from neglect, or notwithstanding our best endeavours to promote the delivery, the uterus should be ruptured, and the fetus should be forced partially, or entirely, into the cavity of the abdomen, the case should then be treated according to

* If that part of the uterus, to which the placenta is attached, should be wounded by a trocar, the uterus might be penetrated without any evacuation of water through the cannula; but the hemorrhage would, in all probability, be very great.

the rules, given hereafter for the management of ruptured uterus, where no such puncture has been previously made.

III. *Of a Rupture or Laceration of the Uterus, or Vagina.*

This is one of the most formidable accidents, that can occur in the practice of midwifery. It is known to have taken place from the following symptoms, viz. a sensation of some part giving way internally, attended with excruciating pain, and succeeded by a cessation of labour-pains; hemorrhage from the *uterus* or *vagina*; the recession of the presenting part of the child; the abdominal tumour being less regular or more diffused, and the limbs, &c. of the fetus being felt more distinctly through the abdominal parietes; vomiting, difficult respiration, paleness or livor, and contraction of the countenance; weak, frequent, and irregular pulse, cold sweats, coldness of the extremities and *deliquium animi*. A rupture of the uterus has, however, been known to occur, without any external hemorrhage, without a recession of the presenting part of the fetus, and without any very evident alteration of the abdominal tumour. In these cases, the diagnosis is

difficult, and sometimes impossible, till the body is opened. But ruptures of the vagina are easily ascertained by an examination.

It does not appear probable, that a rupture of the uterus or vagina ever takes place, in consequence of the violent motions of the child solely. Nor does it, I believe, ever arise from mere distension of the uterus, even where this organ has been previously ruptured, or wounded.* For, although the uterus is sometimes enormously enlarged from a plurality of children, or an excessive quantity of *liquor amnii*, it is rarely found to be completely filled;† the enlargement of this

* The uterus of — Schulers, whose case is related by Dr. Fritse (see Defence p. 82), and who died in a few hours after her next labour, from an effusion of blood into the abdomen, was found very thin, where it had been wounded by the ox's horn, but was not burst.

† Dr. Hunter, speaking of the figure of the gravid uterus, says, "In order to conceive these varieties more easily, we must remember, that in most cases the uterus is not so completely filled as to be upon the full stretch. Were it out of the body, and filled artificially, it would easily contain more than it naturally does. Thus the uterus, like a bladder of water not quite full, is plastic, and moulds itself into various shapes from accidental circumstances." *Anat. Descr. &c.* p. 3.

viscus, in general, preceding that of its contents. Ruptures of the uterus are sometimes occasioned by falls, and other external injuries, previously to the accession of labour. And they have sometimes happened, both in the *uterus* and *vagina*, from the exertions, used in attempting to deliver. They are, however, most frequently induced by the contractions of the *uterus*, and rarely, if ever, take place before the discharge of the *liquor amnii*. This accident has frequently happened, where there was no uncommon obstacle to the delivery, and where, of course, there was the greatest reason to expect a fortunate termination of the labour. In some of these cases, the *parietes* of the *uterus* have been found of unequal thickness and tenacity in different portions, and hence have been unusually yielding in some one point. In other cases, there is reason to believe, that one part of the uterus has been particularly acted upon, owing to some part of the child being more prominent than the rest; or that the uterus and abdominal muscles have contracted irregularly. Where any particular obstacle to the expulsion of the child takes place, a rupture of the uterus may happen, from the uterine contractions being unusually strong; or from the texture of the lower part of the uterus being so far injured,

by being pressed forcibly against the bones of the pelvis, that it is no longer capable of sustaining the violence of its own contractions,* or is even worn through.

* "The rude exertion of manual operation, or the violent efforts of the child are described as the most frequent cause of the rupture of the uterus. But in a case of this kind, which I met with, where the child's arm projected into the belly amongst the viscera, the cause was, on dissection, found to be very different; for the pelvis being extremely narrow, little more than an inch in width, the uterus, by the continued pressure betwixt the brim of the pelvis and the child's head, had been destroyed in the course of a tedious labour." *C. Bell's System of Dissections* Vol. I. p. 89. A somewhat similar case is related by Dr. Garthshore, in his *Observations on Extra-uterine cases, &c.* inserted in the *London Medical Journal* Vol. 8th. "Though sudden ruptures of the cervix uteri may be often less dangerous than those near the fundus, yet there is one case of transverse division of the uterus, which, whether delivery be performed or not, is, I believe, always fatal. I mean where the texture of the uterus is destroyed, and inflammation and mortification brought on by the pressure, during labour, of the projecting process of the os sacrum or sharp ridges of the ossa pubis, or ilia, in a narrow pelvis, against the head or breech of the child. Of this I saw a very remarkable instance in August 1786. A woman, with a very narrow pelvis, had at the full time a breech-presentation, and though she did not suffer the strong compressing pains of labour more than twelve hours, yet at the end of that period, and before the os uteri was completely

The situation of the rupture is various. It has been observed to take place in the *fundus* and body of the *uterus*; but is most commonly found in the *cervix*, especially at its anterior and posterior parts, where it is in contact with the *pubes* and *os sacrum*. Sometimes it affects both the *cervix uteri* and *vagina*, and sometimes the *vagina* only. It is scarcely necessary to say, that the consequences are less to be dreaded, when the laceration is in the *vagina* or *cervix uteri*, except in the case mentioned in the note.

The direction of the wound has been observed to be longitudinal, transverse, and more or less oblique.

dilated, the whole forepart of the *cervix uteri* separated from side to side. This was owing to the pressure of the large portion of the child against the sharp ridges of the *ilia* and *pubis*. The child passed into the general cavity of the abdomen, and a foot presented. In less than two hours after the accident the child was extracted, dead, and with no other difficulty than what was occasioned by the narrowness of the pelvis, but the woman survived the delivery only five hours. The posterior part of the *cervix uteri* was found to be worn through by a large projection of the *sacrum*, which was angular and sharp, but not so much so as the internal superior ridge of the *os pubis* and *ilia*, which resembled the edge of an ivory folder, and had cut the uterus through in the manner a ligature does a polypus."

Its edges have been found smooth, and ragged. The extent of the rupture or laceration is also various; the uterus has even been sometimes completely torn away from the *vagina*, by a violent attempt to deliver by turning the fetus.*

Upon some occasions, the fetus has escaped into the cavity of the *abdomen*, envelopped in the *secundines*; in which case, the abdominal tumour appears equable or regular, after this deplorable accident. Upon other occasions, the fetus has been forced wholly into the abdomen, but not enclosed in the membranes and placenta. Sometimes only a part of the fetus passes through the lacerated wound of the uterus. And it is very probable that, in some instances, no part of the fetus is forced into the cavity of the abdomen, as in a case related by Guillemeau, where the delivery was accomplished without any assistance whatever. The mother died the same day, and, on opening her body, the uterus was found to be ruptured.† Perhaps this accident may have

* See Plenck El. Art. Obst. p. 130.

† “ Mad. de Mommor, âgée de vingt & cinq ans, prête d'accoucher, se trouva mal sur les quatre ou cinq heures du matin, neantmoins se leva & alla à l'Eglise près de son

taken place upon many occasions, where it has never been ascertained or even suspected, and may have occasioned the death of many women in child-bed, who have been supposed to die from other causes.—In some instances, the most alarming symptoms immediately supervene to a rupture of the uterus; whilst in others the constitution is comparatively little affected at first.

In cases of ruptured *uterus* or *vagina*, it may be laid down as a general rule, that, if the fetus be known to be alive, and has been forced into the abdomen, much time ought not to be lost in deliberation; nothing but a speedy delivery of the mother,

logis; ses douleurs, par intervalle, recommençoient, ayant un flux de sang continuel : au bout de trois jours elle accoucha fort doucement, & sans que la Sage-femme luy touchast, mesme l' Arriere-faix suivit incontinent : Toutesfois elle mourut le mesme iour sur le soir; elle fut gardée quelque temps par les parens, qui ne pouvoient croire qu' elle fust morte. Estant ouuerte par M. Pineau Chirurgien du Roy & Juré à Paris, en la presence de Mess. Faber & de Baillou, Docteurs Regens en la faculté de Medecine à Paris, on trouva la matrice rompuë, éclatée, & fenduë par le costé gauche, à l'endroit ou la veine & l' artere hypogastrique montent vers le milieu du corps d' icelle, lesquelles furent pareillement rompuës d' où estoit sorty grande quantité de sang." GUILLEMEAU De la Grossesse, &c. p. 165.

either *per vias naturales*, or by that species of Cesarean Operation, named *Gastrotomy*, can possibly preserve its life. And though we cannot expect, that the mother's life will be often preserved by either of the above modes of delivery, it is, in my opinion, our duty to adopt one of them. An accoucheur should never hesitate to deliver his patient, whenever there is any chance of saving her life, or the child's; he should never be deterred from doing his duty, from fear *ne occidisse videatur, quam sors interemit*. The practice, however, should be varied, according to the circumstances of the case. Thus 1st. If there be no deformity of the pelvis or disease of the soft parts, if the rupture take place after the complete dilatation of the *os uteri*, and the fetus remain wholly, or partially in the *uterus* or *vagina*, I am of opinion, that the child ought to be extracted, without delay, by the natural passages; and the practitioner must be left to determine, from the particular circumstances of the case, with respect to the preference to be given to the Vectis, Forceps, Turning,* or Crotchet.

* Turning was practised in a case of ruptured uterus, as early as the year 1660, by Peu. See *Prat. des Acc.* p. 79.—As a portion of intestine has sometimes been incarcerated in

2. If after the complete dilatation of the *os internum*, a rupture take place in the *vagina* or *cervix uteri*, and the fetus be forced entirely into the cavity of the abdomen, the hand ought, in my opinion, to be introduced, and the child brought by the feet, even though some hours may have elapsed since the accident ; provided there be no great impediment to delivery *per vias naturales*, in consequence of affections of the vagina, or distorted pelvis.

3. If the rupture be situated in the *fundus*, or body of the uterus, and the fetus has very recently passed into the cavity of the abdomen, I think it advisable to introduce the hand, with the view of examining the state of the uterus, and, if it shall be supposed practicable, without extreme violence, to extract the child by the feet, to make the attempt to deliver in this way.

the wound of the uterus, and occasioned death, where the patient might otherwise probably have escaped, it seems to be proper always to pass the hand into the ruptured uterus, after the extraction of the child and placenta, with the view of replacing the prolapsed intestine, and to retain the hand there, till the uterus is sufficiently contracted, to prevent a recurrence of the accident.

4. But, if this deplorable accident be complicated with distorted pelvis, or considerable affections of the *vagina* or *os uteri*; or, if it take place, before the *os uteri* is materially dilated, and whilst it is very rigid; or, if it take place in the body or *fundus uteri*, after the dilatation of the *os internum*, provided many hours have since elapsed, and the *uterus* is become strongly contracted; in all these cases Gastrotomy ought to be had recourse to, in my opinion at least, in preference to leaving the case to nature; and the place of the incision ought to be determined by the situation of the child. Three instances of the successful performance of this species of Cesarean Section, after rupture of the uterus, I have related from Baudelocque.* One woman was the subject of two of these operations—a circumstance, which ought to prevent some of the cases of hysterotomy, recorded by Rousset, from being so confidently rejected, as they have been by some writers. If a woman can bear a repetition of ruptured uterus, and gastrotomy; she may, I think, be believed to be capable of bearing a repetition of hysterotomy,† without incurring the imputation of credulity.

* See Defence p. 74.

† Quid enim loquentur cum Cl. Paræo, contrariæ senten-

5. In those cases, where the fetus has escaped into the general cavity of the abdomen, in consequence of an ulceration of the uterus; or, where it has been long situated in the abdomen, after passing into it through a rupture of the uterus, it will, generally, be prudent to wait till an abscess, or ulceration takes place in some point of the *parietes abdominis*, or of the *vagina*, or *rectum*; we may then second the efforts of nature, by opening the abscess; or dilating the spontaneous ulceration (if this should be necessary), and extracting the fetus, or its remains.

With respect to the prevention of a rupture of the uterus (when from the sensation of exquisite

tixæ patrono, ejus Asseclæ, si quædam septies passæ sunt Sectionem nostram: si multæ aliæ, non toties sectæ, nihilominus pepererunt rursus? Quid contra historias, fide dignas & oculatis atque disertis testibus comprobatas, deblatterabit insulsa negandi prurigo? Tot autem dantur ejusmodi apud auctores exempla, ROUSSETUM, BAUHINUM, SIMON, ut, si in hac fecunditate confirmanda, quis versari diutius vellet, lectoribus nauseam moveret." SAMOILOWITZ p. 75.—"*Sexies tentata est eadem operatio in duobus subjectis, in tertio septies*" (Sonnius, Brugarum Medicus, propriam conjugem *septies* cum successu in abdomine incidit, ut infans ex ea suscipere. —Vide *Roonhuysen Obs. de Morb. Mul. C. 10*); "*eamdem toties excepit novus & felix exitus.*" Ibid. p. 96.

pain in any one part of it, or from any thing peculiar in the nature of the labour, such an accident may be dreaded), by turning the child, as is proposed by some writers, I agree in opinion with Dr. Garthshore, that this ought not to be attempted where the head presents, and the uterus is found closely embracing the fetus; and it is to be presumed, that symptoms, indicating an impending rupture of the uterus, can never be observed or even expected, before the waters are run off, and this close contraction of the uterus has taken place. "Every body knows," says the Dr., "that to turn a child in a strongly contracted uterus, is at all times attended with some danger of a rupture, how much more must it be so, when from any pre-indicating symptoms, or circumstances, however strong, we can be led to suppose that a rupture is in danger of taking place? I myself knew an instance, where a surgeon, in attempting to grasp the feet of the child, when the arm presented, happening only to close his hand in the uterus, found the latter immediately give way. Though the woman was at the same instant delivered, and no very violent symptoms immediately supervened, yet she died in a few days. I am, therefore, clearly of opinion, that, even if the presaging symptoms were more deci-

sive and determinate than I think they ever can be, this method of prevention is too hazardous to be attempted; but equivocal as they must be, I think it is still less to be justified, let the internal evidence be ever so strong.* And I also agree with the Dr., that the vectis or forceps ought to be employed, in such cases, provided the *os uteri* be fully dilated, or nearly so, and very yielding. The propriety of expediting the delivery by one of these instruments, appears from the following case, which happened in his own practice: "A woman with a well formed pelvis, mother of two living children, when in a natural labour at full time, with a very large head presenting, screamed out, and complained loudly of an excruciating pain in one particular part of the left hypogastric region, at the same time that she seemed to be all over affected with spasms, so as to give me very serious apprehensions, that she might either fall into convulsions, or suffer a rupture of the uterus in that particular part. I, therefore, by cautious dilatations, and by assisting the effect of every pain with the vectis, in as short a time as I could with safety to the parts, delivered her of a large living child, and she recovered without the

* London Med. Journ. Vol. 8.

least accident.”* Where the symptoms, threatening a rupture of the uterus occur, before the os uteri is sufficiently dilated, and whilst it is too rigid to admit safely of artificial dilatation, it may be proper to bleed the patient, with the view of diminishing the force of the regular contractions of the uterus ; and to employ the warm bath and opium, with the view of diminishing or removing the spasmodic actions of this organ ; and at the same time to support the part, which is menaced with a rupture, by means of a flannel bandage, or the application of a hand to it, or both.

IV. *Of Extrauterine Conceptions.*

The situation of an *ab origine* extrauterine fetus is three-fold ; viz. 1. In the general cavity of the *Abdomen*. 2. In one of the *Ovaria*. 3. In one of the *Tubæ Fallopiantæ*. Hence these conceptions are denominated *Ventral*, *Ovarian*, and *Tubal*.

1. In a true Ventral Conception, the fetus occupies the cavity of the abdomen from its formation. It does not pass into this cavity in consequence of a rupture, or laceration, or ulceration of the *uterus*, *ovaria*, or *tubæ fallopiantæ*. In this

* London Med. Journ. Vol. 8.

situation a fetus has sometimes been known to attain the full size, at which it arrives *in utero* ; and the case has not been ascertained to be different from a common pregnancy, till towards the end of the ninth month ; when spurious labour-pains coming on, the patient has been examined *per vaginam*, and the uterus has been found to contain no fetus, and the *os internum* very different from what it is at the end utero-gestation.

In some ventral cases the *vis medicatrix naturæ* has been able to free the system from this burthen, by the production of abscess or ulceration in the *parietes* of the *abdomen*, the *vagina* or *rectum* ; or at least it has thus pointed out the way, in which the system may be relieved, with the aid of the surgeon in dilating the ulcer, or opening the abscess, and extracting the remains of the fetus. But the inconvenience, sufferings, and danger, to which the patient is exposed by this natural cure, have always been inexpressibly great, and of long continuance ; and she has frequently sunk under the process.

In other cases the fetus has been carried for twenty years or more, without any natural efforts being made to remove it from the abdomen.

In these instances, the degrees of pain and inconvenience, experienced by the patients, have been very various, though always considerable; and sometimes the fetus has been found incruited with a hardened mucus, or earthy substance.

Finally, in other cases, Gastrotomy has been performed, by which means the patient has been more speedily freed from her burthen, but her life has generally been exposed to great danger, and sometimes this practice has terminated fatally.

Ventral conceptions, in whatever way they are treated, expose the patient to considerable inconvenience and danger; and it is not altogether agreed amongst practitioners, to which mode the preference should be given. To me it appears proper, that the practice should be varied according to the circumstances of the case. For, in the 1st. place, If the ovum be of small size; if the fetus be believed to be dead, and the health of the mother be not very materially affected, so that we may entertain considerable hopes of supporting her strength, till the inconvenience and pain, arising from her burthen, are diminished; or till nature has freed herself from it, in the manner above pointed out; or, at least, till nature has indicated the way, in which she is attempting to relieve her-

self; in all these cases our attention, at first, ought to be directed to the support of our patient, and as soon as an abscess or ulcer takes place, we ought to second the efforts of nature, by employing the knife and extracting the remains of the fetus. 2dly. If the fetus be of the full size, and known to be alive, I am of opinion that we ought to have recourse to the operation of Gastrotomy.* And 3dly. If the fetus be dead, but has arrived at a considerable size, and, by its pressure upon the abdominal *viscera*, has so far endangered the life of the mother, that it does not appear possible for her strength to be supported, till a natural cure can take place, I am of opinion that, in this case also, provided the patient has sufficient strength to bear the immediate effects of the operation, Gastrotomy is the most proper practice that can be adopted.

The choice of the place, in which the incision ought to be made, when the operation of Gastrotomy is resolved upon, must depend upon the situation of the child. In most cases it will be

* The operation mentioned above, by which the surgeon merely seconds the efforts of nature, and extracts only the bones of the child, is not properly considered as a case of gastrotomy.

necessary to cut through the abdominal parietes: But when the head, or any bulky part of the fetus, has descended low into the pelvis, and is plainly perceived to be placed between the *rectum* and *vagina*, I think it would be preferable to perform the operation, named Vaginal Gastrotomy, viz. to cut through the back part of the *vagina*, and to bring the child through the *os externum*. Three cases have occurred in this kingdom, in which the fetus was situated as just described: one to Dr. Kelly,* which terminated fatally before any ulceration was produced; one to Dr. Gordon, in which the bones of the fetus were discharged through the rectum, and the woman recovered; and one to Mr. Colman of Norwich, which is related in the Med. and Physical Journal for October 1799. In this case an opening took place in the vagina, through which Mr. Colman passed his finger, and it entered immediately into the head of the child. The bones of the cranium, and afterwards the remains of the fetus, in a highly putrid state, which appeared to be a male and at the full time, were extracted through the opening into the vagina. No portion of the *funis umbi-*

* Med. Obs. and Inq. Vol. 3.

† Duncan's Comment. Dec. II. Vol. 8.

licalis remained. The expulsion of the placenta* was left to nature. A communication had taken place between the *vagina* and *rectum*, as the *fæces* were discharged through the former passage. She remained in great danger for some time, but recovered so far, in about fifteen months, as to be able to manage her domestic affairs; some of the *fæces* however continued to pass *per vaginam*. Mr. C. puts the following question, "If a case were to occur, where the *fœtus* was situated the same as in Mrs. Cooper's, would it not be prudent to make an opening in the *vagina*, sufficient to admit the extraction by first perforating the head, and extracting by the crotchet and blunt hook, by which means probably, the opening into the bowels might, in this case, have been prevented, and the woman not brought into such imminent danger by the putrefaction of the child?" As the child was alive on the 25th Dec. 1798, when the midwife was first called in, and as Mrs. Cooper was, at that time, at the full period of her reckoning, it is not improbable that her child's life might have also been

* It does not appear, however, that the placenta was expelled, and it seems not improbable, as the navel string had disappeared, that the placenta was removed before the child was extracted.

preserved, if the operation had been then performed, and the child extracted by the forceps or vectis. But the child was known to be dead on the 7th of Jan. 1799, when Mr. Colman was first called in, so that the method, proposed by him, of delivering with the crotchet, appears to me to have been the most proper, that could be adopted at that period; since this mode of delivery would not require so large a wound to be made in the *vagina*, as would be necessary for extracting the child entire.*

2. In Ovarian cases the fetus seldom lives more than four months, or, at least, rarely acquires a size, greater than that of an uterine fetus in the third or fourth month. Cases of this kind are frequently attended by many painful and distressing symptoms, as *colic*, &c., and are distinguished, when the ovum arrives at any considerable size, by being situated in the iliac, not in the hypogastric region. Their event is various: For 1st. The fetus remains many years, or during the life of the patient, in the ovary, without doing any very material injury to the mother. 2. The ovary bursting, the fetus escapes into the general cavity of the *abdomen*, and a fatal hemorrhage is produced;† or, if this do not take place, the fe-

* For the method of managing the placenta see p. 48, &c.

† Lieutaud. T. I. L. 1. Obs. 1542. Bon. Sep. L. III. S. 37.

tus is carried in the abdomen without much apparent injury ; or, it is removed by a suppuration, or ulceration of some point of the abdominal *parietes, vagina, uterus, or rectum.*

3. In Tubal conceptions, the *ovum* rarely exceeds the size of an uterine *ovum* in the third month. But cases are recorded, where the fetus is said to have attained its full size, or nearly so,* and has been removed by an incision made into the *tuba*, and the mother has survived the operation. The *phænomena* and *event* in tubal conceptions† are nearly the same as in ovarian cases.

V. *Of the Obliquity of the Uterus.*

By the *obliquity* of the uterus is understood a deviation of its longitudinal axis from the axis of the superior aperture of the pelvis, in the latter months of pregnancy.

The *transverse axis* of the uterus is a straight line, extending from the insertion of one *Tuba Fallopiana* to the other. The *longitudinal axis* is a straight line, drawn perpendicularly upon the middle of the transverse axis, from the centre of

* Ab. Cypriani Hist. &c. 1700. Lieutaud Obs. 1532.

† Ibid. Obs. 1539. Bon. Sep. L. III. S. 37.

the *os uteri*. In the unimpregnated state of the uterus, its longitudinal axis corresponds, for the most part, nearly with the axis of the superior aperture of the pelvis; but forms almost a right angle with the axis of the *vagina*.* At the beginning of the fourth month of pregnancy the *fundus uteri* begins to emerge from the tubular portion of the pelvis, and, at the end of the 9th month, it has ascended higher than the *umbilicus*, its longitudinal axis, when it is in the most natural position, corresponding with the axis of the superior aperture of the pelvis, and the *fundus uteri* being in contact with the middle of the anterior part of the *parietes abdominis*.

The deviations from this position of the *uterus* differ in extent, from the slightest variation to that extreme degree, in which it is placed transversely, with respect to the axis of the trunk, its

* "Vaginæ contra axis cum axi uteri & pelvis minus convenit, sed cum eodem angulum facit versus corporis anteriora. Quodsi enim distantia arcus ossium pubis ad ossis coccygis extremum 5 pollicum assumatur, distat centrum orificii vaginalis ab arcu ossium pubis poll. 1. lin. 1., a centro vero aperturæ inferioris, per quod axis transit, poll. 1. lin. 5. Dictum vero aperturæ inferioris centrum penitus coincidit cum ani centro, ita ut per centrum ani pelvis axis transeat." Roed. § 44:

fundus being depressed as low, or even lower than its *cervix*.* When the obliquity is slight, it is said to be *incomplete*; when the obliquity is so great, that a part of the *os uteri* rests upon some bone of the superior aperture, it is said to be *incomplete*.†

The obliquity of the uterus varies in kind, as well as in degree, and hence is distinguished into :
 1. *Anterior*, when the *fundus uteri* is situated too low, and turned too much forwards, and the *os uteri* is opposed to the base of the *os sacrum*, or to the lumbar *vertebræ* : 2. *Lateral*, when the *fundus uteri* is placed too low, and inclined too much to the right or left side of the *abdomen*, the *os uteri* resting against the opposite *os ilium* : 3. *Posterior*, when the *fundus uteri* is inclined towards the dorsal *vertebræ* (which have that species of curvature named *cyphosis*), and the *os uteri* is directed

* Mauriceau in his *Dern. Observ. sur les Grossesses*, mentions the case of a dwarf, only two feet in height, whose abdomen reached down to her knees. This poor creature was suffered to be three days in strong labour, and to die undelivered, with her child, in preference to employing the Cæsarean Section. *Obs.* 73.

† See Plenck *El. Art. Obst.* p. 121.

towards the *symphysis pubis*.* This last kind of obliquity is very rare. It is to be observed, however, that, in consequence of a certain degree of curvature of the uterus, the *os tinæ* is sometimes not directed to the side of the pelvis, opposite to that occupied by the *fundus*, but occupies its centre, or very nearly.

Various causes of obliquity of the uterus have been enumerated, viz. deformity of the pelvis and spine, unequal distension of the uterus, laxity of the abdominal parietes, relaxation of the ligaments of the uterus, place of attachment of the placenta, &c. &c.; but into the consideration of these it is not my intention to enter here.

* It may be proper to observe here, that, when the *fundus* of an uterus, which is either not impregnated, or is in the earlier months of pregnancy, is turned backwards and downwards between the *vagina* and *rectum*, and the *os uteri* is turned upwards and forwards to the *pubes*, this organ is said to be *retroverted*: And it is said to be *retroflexed*, when the *fundus* is situated as in a retroversion, whilst the *os uteri* remains in its natural situation. The retroflexion of the uterus is a much less frequent occurrence; and Dr. Denman is of opinion, that it can only be produced by the bending of the uterus in the middle, before it is properly contracted after delivery. See Denman's Introd. to Midw. V. 1. p. 140.

The sentiments of british and foreign practitioners, perhaps, in no instance differ more widely than with respect to the treatment, necessary in cases of obliquity of the uterus. Dr. Hunter says, "As far as I have been able to observe, the mere obliquity of the uterus never occasions so difficult a labour, as to require any artful management to bring the *os uteri* into a proper situation. In such cases, as in many others, *art can do little good, and patience will never fail.*"* And the opinion of Dr. Denman upon this point does not differ from that of Dr. Hunter. He disapproves of every attempt to draw the *os uteri* to a central position, with respect to the cavity of the pelvis; but recommends, with the view of correcting the obliquity of this viscus, that the patient be confined to a proper position. "If, for example, the *os uteri* be projected to the left side, she ought to rest as much as possible on the same side, and so of the right, &c. &c."† And in every case of obliquity, not complicated with deformity of the pelvis, which has occurred to me, I have found this treatment sufficient. The directions given by Roederer,‡ Plenck,§ Baude-

* Anat. Descr. &c. p. 11. † Introd. to Midw. Vol. II. p. 63. ‡ El. Art. Obs. p. 211. Ed. Wrisb. § El. Art. Obst. p. 122.

locque,* &c. are, however, very different. And their observations shew, that it has been sometimes necessary to assist with the fingers, in bringing the *os uteri* into a more central situation, with respect to the cavity of the pelvis;† and, in one instance at least, that species of Cesarean Section, named Vaginal Hysterotomy, has been deemed necessary, and performed with success. “ Si l’ obliquité de la matrice étoit telle qu’ on ne pût en trouver l’ orifice, & que la mère & l’ enfant parussent exposés au danger de périr, il faudroit ouvrir la portion bombée de ce viscère qui correspondroit à vulve. Lauverjat a rencontré ce cas dans sa pratique.‡ Une femme enceinte pour la première fois, & parvenue au moment d’ accoucher, éprouvoit des douleurs si vives, que Lauverjat voulut s’ assurer de l’ état des choses. Il fut surpris de trouver la vulve occupée par un corps qui la remplissoit, & la dépassoit, & qui cédoit à l’

* L’ Art. des Acc. § 300. † See Baudelocque § 298.

‡ See his *Neue Methode den Kayserchnitt zu machen* p. 188; where he adds, that this and other cases prove, that the vaginal Cesarean Operation is void of danger. “ Uebrigens überzeugen diese und die oben aügeführten Beobachtungen, dass der Scheidenschnitt keine gefahr nach sich zieht.” Few accoucheurs, however, will, in my opinion, be disposed to assent to this assertion.

impulsion du doigt, excepté dans le temps des douleurs. En parcourant cette tumeur, il ne trouva à la circonference qu'un cul-de-sac de demipouce de profondeur, sans ouverture, qui pût permettre la sortie de l'enfant. Des confrères, mandés pour ce cas extraordinaire, voulurent voir aussi comment les choses se passoient. Ils trouvèrent sur la tumeur *une déchireure* qui n'interessoit qu'une partie de l'épaisseur de ses parois. Cette déchirure leur parut le lieu, où il falloit inciser. L'opération faite, le doigt entra dans la poche, dans laquelle l'enfant étoit contenu. Il sortit beaucoup d'eau bourbeuse. L'enfant se présenta & franchit l'ouverture, qui venoit d'être pratiquée, & à laquelle il se fit une petite dilaceration du côté droit. Lauverjat ayant porté la main dans la poche, ne trouva aucune trace de col ni d'orifice. Du reste il ne survint point d'accidens, & les écoulemens se firent à travers l'ouverture, qui se ferma par degrés. Deux mois après, le col & l'orifice de la matrice étoient dans leur état naturel." SABATIER *De la Med. Opératoire* Tome 1. p. 316. It is not however probable, that abdominal hysterotomy can ever become necessary from simple obliquity of the uterus; and, when complicated with extreme de-

formity of the pelvis, the position of the uterus is not the primary consideration.

VI. *Of Hernia of the Uterus.*

Several examples of the gravid uterus forming the contents of a hernial sac are recorded; and, in some instances, no difficulty is said to have occurred with regard to the delivery. In one case, related by Ruysch,* the midwife accomplished the reduction of the uterus, and the patient was delivered *per vias naturales*. But in two cases, related by Sennertus,† Hysterotomy was had recourse to: In one of them the mother only lived three days, and the child a few months. In the other, the operation appeared at first likely to terminate favourably: The mother lived twenty days, and no evident cause of her death appeared on dissection. The child lived nine years.

VII. *Of Affections of the Os Uteri, Vagina, and Os Externum.*

The *Affections* of the *os uteri*, which are found

*Adv. Anat. & c. Dec. II. p. 25.

† Lib. II. P. I. Cap. IX. and Lib. IV. P. I. Sect. 2. Cap. 16.

to prove obstacles to delivery, are 1. *Concretions*, or *Cicatrices* succeeding to wounds, ulcerations, or gangrene. 2. *Tumours* of a callous, schirrous, or fleshy nature.* The difficulties, presented by the former class of affections, when occurring independently of deformity of the pelvis, are not likely to require abdominal hysterotomy. They may, in general, be expected to be surmounted by the contractions of the uterus alone; but sometimes, perhaps, may require the performance of vaginal hysterotomy. The latter class of affections may, however, sometimes, though rarely, be incapable of being removed or remedied; and, when very large, may by their bulk so far diminish the capacity of a well formed pelvis as to render the perforator and crotchet necessary, and even abdominal hysterotomy, or gastrotomy, where a rupture of the uterus has previously taken place. *F. Hildanus*† relates the case of a woman, to whom he was called, when she had been in labour six days, her strength was then much exhausted, and she died the following night. On opening the body, the uterus was found to be

* See Lieutaud Hist. Anatom. Med. V. 1. Lib. 1. S. 12. Boneti Sepuchr. Lib. III. Sect. 38. &c. &c.

† Oper. Cent. 1. Obs. 67.

ruptured, and the head of the fetus protruded into the cavity of the abdomen: And there was a schirrous affection of the *os internum*, equal in bulk to the head of a new-born child. A very interesting case is also given by Dr. Denman. The excrescence was fleshy, resembling a cauliflower; and the patient suffered much from repeated hemorrhages, which proceeded entirely from this tumour. When it was thought necessary, that she should be delivered, it was found impossible to extirpate the tumour, and the tumour was of such a size as to prevent the child from being born *per vaginam*, in any other way than by lessening the head. "This was performed; but, after many attempts to extract the child, the patient was so exhausted, that it became necessary to leave her to her repose, and very soon after our leaving her, she expired."* "The propriety or advantage of a practice," adds the Dr., "by which the life of neither the parent or child was preserved, ought to be considered; but such cases occur so rarely, that there is always room for animadversion, when they are concluded. Yet the general principle of its being ever our duty to preserve both their lives if possible; or to

* Introd. to Midw. Vol. II. p. 94.

*preserve that of the parent ; or, if she cannot be preserved, then to save the child, if it is in our power ; would have been a better guide on this occasion, than that which was followed :"** This passage shews very plainly, that the Dr. thought the Cesarean Section ought to have been had recourse to in this case. When schirrous affections of the *os uteri* concur with deformity of the pelvis to render delivery extremely difficult *per vias naturales* ; if the contraction of the pelvis be such as to require the use of the crotchet, and the child be known to be alive, it may be better to have recourse to the Cesarean Section than to make one or more incisions into the *os uteri*, and afterwards employ embryulcia, as in the case related by Dr. Simpson.† The Dr. found the sides of the *os internum* grown together, without any vestige of a passage, he therefore made an incision through the substance of the womb, which was half an inch thick, and, the whole circumference being hard like cartilage, and not yielding to the pains, he made several incisions into the cartilaginous ring. He was afterwards obliged to open the child's head, a practice, which had been

* Introd. to Midw. Vol. II. p. 95.

† Med. Ess. and Obs. Vol. III. p. 291. &c.

found necessary in her former labour, owing to the narrowness between the *ossa pubis* and *os sacrum*. This patient died in 24 hours after.

The *Affections* of the *Vagina* and *Os Externum* are *Cicatrices*, *Strictures*, or *Adhesions*, &c. *Cicatrices* and *Strictures* retard delivery, but the impediment, arising from them, is, in general, overcome by the pressure of the head of the child, impelled by the pains; and hence it is rarely necessary to offer any particular assistance on this account. *Adhesions* are sometimes more troublesome, and of more difficult management; especially when situated high up in the *vagina*. In these cases it may become requisite to separate the parts, which adhere, by the knife, and in doing this great care is necessary, in order to avoid wounding the bladder or *rectum*. It has also been found necessary, on account of malconformation of the *os externum*, to dilate this with the knife.

VIII. *Strange bodies diminishing the capacity of the pelvis.*

These are 1. *Diseased Ovaries*. 2. *Steatomatous tumours*. 3. *Stones in the bladder*, &c.

1. An enlarged Ovary has sometimes been

found a great impediment to delivery, and has even rendered it necessary, where the pelvis was well formed, to make use of the perforator and crotchet. A case of difficult labour, arising from an enlarged ovary (which was five or six inches in length, and one and a half in thickness, and of a steatomatous nature, but contained some hair, and nine teeth), is related by Baudelocque.* It was mistaken for a projection of the *os sacrum*, and the Cesarean Section had been proposed by one of the accoucheurs, who attended. Baudelocque advised the turning of the child, which was put in practice; but both mother and child died. He advises us in such cases to push up the ovary above the edge of the *fossa iliaca*. Two cases of diseased and enlarged ovaries occurred to Dr. John Ford. In the former, the tumour, which was large and firm, and situated between the *rectum* and *vagina*, filled up all the concavity of the *os sacrum*, and a considerable share of the cavity of the pelvis; and it was judged necessary to deliver, by opening the head of the child. The mother died at the end of three weeks: And the body being opened, the tumour was found to be an encysted dropsy of the ovarium, in which there

* L' Art des Acc. Tome II. § 1964.

was a considerable quantity of hair. In the latter case, which, in all its circumstances, resembled the former, a trocar was pushed through the posterior part of the *vagina* directly into the tumour, which subsided in consequence of a large discharge of water, and a living child was born without any further assistance. This patient recovered from her lying-in ; but became hectic some time after, and died about the end of six months. Her body was not examined.* From the above cases it would appear, that the Cesarean Section is not indicated, on account of a diseased and enlarged ovary simply : But this disease occurring along with a degree of deformity of pelvis less than that, which would in itself require this operation, may upon some occasions, perhaps, render it necessary to have recourse to hysterotomy.

2. A Steatomatous tumour, springing from one side of the upper *os sacrum*, and passing across so as to fill up the greater part of the superior aperture of the pelvis, was mistaken by the late Dr. Hunter for a projection of the lowest lumbar *vertebræ*, or the upper part of the *os sacrum*. As it was impossible for the woman to be delivered in

* See Denman's Introd. to Midw. Vol. II. p. 100.

any other way *per vias naturales*, the head of the child was opened : The mother died on the fourth day after delivery.* This is a rare occurrence ; and I do not recollect to have met with any instance, in which the Cesarean Section was resorted to on account of a *steatoma*.

3. The presence of a large Stone in the Bladder, if pushed before the child's head into the cavity of the pelvis, may add very materially to the difficulty and danger of a labour : Insomuch that it may sometimes become necessary to extract the stone, previously to the delivery : But it is not probable, that hysterotomy can become necessary merely from this cause.

IX. *Convulsions or Epilepsy.*

This malady, though enumerated by Lauverjat amongst the cases, indicating the Cesarean Section, can never alone render it necessary to have recourse either to abdominal, or vaginal hysterotomy. It may be complicated, however, with some other circumstance, requiring this operation, and will, doubtless, add much to the danger of both the mother and fetus.

* See Dr. Denman's Introd. to Midw. Vol. II: p. 100.

The epilepsy of a parturient female is not distinguished by any peculiar symptoms, as far as I have been able to observe in a variety of cases, which have occurred to me. In some instances, I have known a violent single paroxysm only to take place; and the subsequent stupor has been of longer or shorter continuance. In others I have known the paroxysms to be extremely violent, so as to render the pulse for some time imperceptible, and to recur very frequently, for a great number of hours, the stupor being more or less complete in the intervals.

The danger of this complaint is to be estimated from the violence and frequency of the paroxysms, and the degree of stupor, which succeeds them.

The treatment is to be varied according to the cause of the complaint, and the state of the patient, so that no single general rule can be laid down as proper, and applicable in every case.

For, 1st. It is evinced from a number of cases, that Epilepsy may occur in the ninth, or an earlier month of pregnancy, and prove fatal without inducing abortion or labour. It is equally proved, from a variety of instances, that Epilepsy, occurring in any period of utero-gestation,

may go off without inducing labour or abortion ; and that the patient, in these cases, may experience no return of the complaint in her labour.

From this view of the subject, it is evident that, when epilepsy occurs in a pregnant woman, previously to the accession of true labour-pains, and to any change in the state of the *os uteri*, it is to be treated agreeably to the rules, laid down for the management of the disease, when not occurring during utero-gestation. If it arise from fullness of the *Sanguiferous System*, and determination of blood to the head, after general blood-letting, a topical evacuation of blood is to be made by the application of Leeches to the temples, or, which is more effectual, by opening one of the temporal arteries, or of the external jugular veins : and the propriety of repeating the blood-letting is to be determined from the habit, and other conditions of the patient. Purgative glysters are to be injected. A blistering plaister is to be applied betwixt the *Scapulæ* and the *Pediluvium*, or *Semicupium* is to be employed. The face is at the same time to be sprinkled with cold water. If the *Nervous System* be primarily affected, the evacuation of some blood, generally or topically, may be necessary to obviate the danger of an accumulation, or effusion

of blood upon the *encephalon*, arising from the violent exertions and irregular distribution of this fluid during the paroxysms; but opium and other stimulants and antispasmodics are principally to be confided in, for the removal of the complaint. When the stomach and intestines have been affected with spasmodic pains, before the accession of the convulsions, opiates are particularly useful; and if the power of swallowing be suspended, a large dose should be injected into the *rectum*. As, however, abortion or premature labour is liable to take place in every dangerous disease, affecting pregnant women, it will be advisable to examine the patient *per vaginam* occasionally, in order to determine whether the *os uteri* is becoming dilated by the paroxysms. One material advantage, to be derived from this attention, is, that as the dilatation of the soft parts, and the expulsion of the fetus are sometimes effected with very great violence and rapidity by the repetition of the convulsions, it will be in our power to counteract these, in some degree; and, by preventing laceration, to conduct the delivery with more safety.

2dly. It frequently happens, that a convulsion or epileptic paroxysm does not take place till to-

wards the end of labour ; and, the delivery being speedily completed, no return takes place, and no particular treatment is required.

gdly. Upon many occasions, however, the first paroxysm takes place at the commencement, or in an early stage of labour, before the *os uteri* is materially dilated ; and the return of the paroxysms is evidently connected with the return of the pains. In these cases, it does not seem proper to expedite the labour by any rude or injurious attempts to accomplish the delivery ; but the different means pointed out, as necessary to be employed in Epilepsy, unconnected with labour-pains, are to be employed according to the different circumstances of the case, till the *os uteri* be completely dilated, or will easily admit of full dilatation. As soon as this has been effected, I am of opinion that the delivery may be promoted, with advantage both to the parent and child ; and the choice of the means, to be employed for this purpose, viz. the hand alone, the vectis, forceps, or crotchet, is to be determined, from the presentation and situation of the child, and the natural state, or deformity of the pelvis. For every paroxysm is to be dreaded, since it may destroy the mother, or, by suspending the circulation of her blood, and

the violent agitation produced, it may kill the child. Hence, it has frequently happened, that convulsions have proved fatal to the fetus, where the life of the mother has been preserved. Delivery, indeed, in many instances, will not put an immediate stop to the recurrence of convulsions; but, after delivery has been accomplished, we may expect to derive greater advantages from the employment of other means. In two cases, wherein I delivered the patients under strong convulsions, these continued to recur for several hours afterwards; but both the violence and frequency of the paroxysms were evidently abated by the delivery, and the patients recovered.

It remains only to add, with respect to the Epilepsy of parturient females, that, when we can foresee that a paroxysm is likely to take place, from the presence of vertigo, blindness, head-ache, and delirium, rigor, or violent pain in the stomach or bowels, we should endeavour, by appropriate remedies, to prevent the attack. These remedies are to be selected from the means, employed with a curative intention; and we are to be determined in the choice of them by the nature of the existing symptoms.

X. *Of Preternatural Presentation of the Fetus.*

Hysterotomy has, in several cases, been resorted to on account of the preternatural presentation of the child, when accompanied by an insuperable contraction of the uterus. And it is, at this day, recommended by Plenck* under such circumstances, provided the child be known to be alive.

Where the pelvis is so extremely distorted, as only just to admit of the delivery's being accomplished by the crotchet, when the child presents with the head; I am of opinion, that it may become necessary to have recourse to the Cesarean Operation on account of the fetus presenting with an arm, shoulder, or the thorax. But, unless the preternatural presentation of the child be combined with great deformity† of the pelvis, or

* "Si vero manus obstetricans nullo modo ad fetus pedes, ob uterum arctissime circa fetum constrictum, obtingere posset, tunc si fetus *vivus* hysterotomia, si fetus *mortuus* embriotomia est peragenda. Sed cave, ne spasmum uteri opio relaxandum pro uteri contractione non relaxanda habeas." El. Art. Obst. p. 176.

† Where the deformity of the pelvis is very considerable,

such affections of the soft parts, as would in themselves prove an almost insurmountable obstacle to delivery *per vias naturales*, even although the fetus be certainly known to be alive, I cannot admit, that it can indicate, or justify the performance of Hysterotomy. For, 1st. When the uterus closely embraces the fetus, and at the same time the labour-pains are so strong, and recur so frequently, that it would be improper to attempt to introduce the hand, (for fear of rupturing the uterus, or tearing it from the *vagina*), and impossible to succeed in turning the child; after waiting some time, it has been found that the *nates*, or feet of the fetus, have been forced into the pelvis, or through the *os externum*, and the body has been afterwards expelled, or extracted with safety to the mother. The life of the child, in some of these instances, has also been preserved. This

a child may be extracted *entire* by the feet, without making use of the perforator and crotchet, as will be shewn hereafter; and, where the contraction is still greater and complicated with a preternatural presentation, we may be able to succeed by employing the perforator. It is only in those cases of distorted pelvis, in which delivery is barely possible by the crotchet, when the fetus presents naturally, that a preternatural presentation of the child will render the Cesarean Operation absolutely necessary.

fact of a natural turning of the child, was, I believe, first established by Dr. Denman, and is named by him the *spontaneous evolution* of the child. 2. Where the child fails to be turned by the regular contractions of the uterus, these may, after some time, recur with much less force and frequency, so as to admit, with safety, of the introduction of the hand, and the extraction of the child by the feet. 3. Where there is a strong permanent contraction of the uterus round the body of the child, in consequence of the *liquor amnii* having been long discharged, without any forcible labour-pains, or spasmodic contractions of the uterus, by patience and perseverance the hand may be insinuated into the uterus, the feet of the child brought down, and the body and head extracted.*

* In extracting the trunk and head of the fetus, after turning it, particular attention should be paid to the diameters, and axis of the pelvis. The following directions, given by Plenck, are so concise and judicious, that I think it proper to introduce them here.

“*Extractio Pedum & Corporis.* Apprehensis pedibus mox digitus medius his interponatur, & reliquis digitis supra malleos pedis firma manu applicatis, attrahantur pedes deorsum versus anteriorem fetus abdominis superficiem, in quam par

In these difficult cases, before an attempt is made to deliver by turning, a quantity of blood may, in some cases, very properly be taken away, which is to be proportioned to the strength and

tem maxime flexilis est fetus truncus, dein continuetur tractio pedum, donec per uteri & vaginæ orificium foris moti appareant. Pedes sub extractione linteo sicco circumduntur, & sic vertantur, ut digiti eorum os sacrum respiciant. Demum in hoc situ *aliquantum obliquo* totus fetus truncus juxta pelvis axim ad axillas usque, volis manuum juxta dorsi spinam applicatis, ne spinæ luxatio contingat, caute extrahatur."

"*Solutio Brachiorum.* Truncus infantis manu versus pubem matris elevatus nonnihil ad latus dirigatur, deinde manus sub abdomen fetus in vaginam ad flexuram cubiti usque introducatur; prehensus cubitus deorsum ad thoracem infantis arcuato motu foras extrahatur. Solutio brachio posterius locato, eadem methodo & alter solvatur."

"*Extricatio Capitis.* 1. Diameter longitudinalis capitis fetus *diametro obliquæ* in introitu pelvis, qui situs naturalis est, respondeat. 2. Inferantur digitus index, & medius in pelvim usque ad nasum fetus; hi digiti juxta nasum *ad maxillam* superiorem applicentur, & sic illorum opera facies fetus in cavitatem ossis sacri attrahatur. 3.— digitis duobus alterius manus *ad nucham* applicatis occiput eodem tempore mox versus superiora pelvis in altum retrudatur" (the patient being supposed to be upon her back); "hac duplici actione *caput antea oblique situm* mutetur ita, ut facies cum syncipite in cavo ossis sacri recta locetur. 4. Dum levi at-

state of the patient ; the *rectum* and *vesica urinaria* should be emptied ; and a large dose of *Tinctura Opii* should be given, which will be found particularly useful, in moderating those irregular or spasmodic contractions of the uterus, which are sometimes superadded to the permanent contraction, or to the intermitting contractions, or throes, of this *viscus*. 4. Where the permanent contraction of the uterus is so strong, and the thorax of the fetus so strongly impacted in the pelvis, that the accoucheur cannot succeed in turning the child, if the defect of labour-pains leaves him no room to hope, that a natural turning of the child will be effected, and especially if the woman be much fatigued, and endangered, and the fetus be known to be dead, recourse should be had to

tractione trunci, versus pubem matris elevati, facillime juxta axim pelvis educitur caput infantis." El. Art. Obstetr. p. 162. When we are extracting a child by the feet through a deformed pelvis, a deviation from the above rule, which directs us to place the long diameter of the head of the fetus in one of the oblique diameters of the pelvis, becomes necessary. It will generally be proper to make the long diameter of the head correspond with the transverse diameter of the pelvis ; by which means the narrow diameter of the head will correspond with the narrow diameter of the pelvis, extending from pubes to sacrum.

Embryotomy. A poor woman, about six miles from Blackburn, who had formerly had easy natural labours, sent for the midwife, by whom she had been usually attended. The midwife waited a considerable time, after the *liquor amnii* was discharged, and then, discovering that an arm of the fetus presented, a surgeon in that neighbourhood was called in. He found one arm of the child in the *vagina*, and the *thorax* occupying the superior aperture of the pelvis. As the uterus was strongly contracted round the child, he met with considerable difficulty in introducing his hand; but after some time succeeded, and laid hold of one foot. Not being able to reach the other foot, he thought it proper to make an attempt to turn the child by bringing down the foot, he had already seized; with this view he used so much force, that the foot was pulled off, and, the woman being extremely untractable, he could not prevail upon her to suffer him to make a further attempt to deliver her, and I was sent for to her. When I arrived, she refused to be examined, and insisted upon being left to die undelivered. However, after remaining some hours with her, and alternately employing entreaties and threats, she consented to be examined, if she might be permitted to sit upon the knee of an as-

sistant, and if I would promise not to introduce my hand to turn the child. To this I agreed, and, finding an arm and a leg of the fetus in the *vagina*, and the *thorax* engaged in the superior aperture of the pelvis, I was of opinion, as the pelvis was well formed and the child dead, that the most eligible mode of delivery would be to have recourse to Embryotomy.* I accordingly made

* For the operation of embryotomy, the Scissors, Blunt Hook, and Crotchet are necessary; the simple perforator being not so well adapted to this purpose as the scissors. When the thorax of the fetus presents, and is wedged in the pelvis, the following judicious directions are given by Plenck for performing this operation.

“1. Obstetricator digitos suæ manus sinistrae imponat costis thoracis præviis. 2. Dein manu destra perforatoriam forcem super manu sinistra ad thoracem imponat, & inter duas costas hoc instrumentum in thoracis cavum immergat. 3. Tandem simile vulnus sub costa prioris vulneris infligat thoraci fetus, atque digito suo in uncum flexo costam vulneribus inflictis intermediam evellat. 4. Demum unco obtuso in thoracis aperti cavum immisso, *pulmones* atque *cor* fetus extrahat. 5- *Diaphragma* fetus dein perforatorio incidat, & unco per diaphragmatis vulnus in abdominis cavum introducto hepar, & intestina fetus sensim extrahat. 6. Evacuatis tali modo thoracis, & abdominis cavitatibus obstetricator facillime poterit manum suam super complanatum thoracem & abdomen ad pedes fetus introducere, ac fetum per pedes extrahere.” El. Art. Obst. p. 201.

two perforations into the *thorax* of the fetus with the scissors. I afterwards removed two of its ribs, and extracted the thoracic *viscera*. By these means I gained so much room, that I did not think it necessary to pass the scissors through the diaphragm into the *abdomen*, for the purpose of bringing away any part of the *viscera*, contained in that cavity ; but I immediately began to attempt to extract the child, and I succeeded very soon and with little trouble, the *nates* of the *fetus*, after the *thorax* was evacuated, being very easily brought down into the cavity of the pelvis. The poor woman recovered as well as is usual after a natural labour.

XI. *Of Monstrous Conformation of the Fetus.*

A Fetus is said to be monstrous, 1. From a defect of parts, as when a thumb, an arm, or the upper part of the *cranium* is wanting. 2. From some part being proportionally too large, as when the head is affected with a dropsy, or has a very large tumour upon it, &c. 3. From too great a number of parts, as when there are two heads, &c.*

* The following curious definition of Monsters is given by *Licetus*, “*Physice vero, ac proprie monstra dicuntur, quæ*

When the Monstrosity arises from a defect, or from the unusually small size, of one or more parts of the body, though it may occasionally make the presentation of the child less easily determinable, as in the case of acephalous monsters, it does not add to the difficulty of the labour, and will therefore be no further noticed in this place.

The Monstrosity, arising from encreased bulk, is very various, and, upon some occasions, presents a very considerable obstacle to delivery. Thus,

1. The HEAD of the child, independently of disease, may be of such size, when it is met with in conjunction with an extremely distorted pelvis, that hysterotomy may become necessary on this account, although a child of small or moderate size might have been extracted by the crotchet. The head may be also enormously enlarged, in consequence of a *collection of water*; but hysterotomy can never be indicated simply on this

in subcælestium animantium genere non sponte genita membrorum constitutionem perfectæ progenitorum structuræ turpiter dissimilem, ac eorum naturæ minime consentaneam sortita fuerant, ut puellus expes, puella biceps, cinocephalus, centaurus, & alia id generis." De Monstris p. 4.

account; and embryulcia is not very often necessary, as the head, in general, becomes elongated, and is expelled by the natural pains. When, in a case of *hydrocephalus*, the head presents, this affection is generally recognised without much difficulty by the large space between the bones of the cranium. But, upon some occasions, the head of a living fetus feels so much like a *hydrocephalus*, that I think it proper to observe here, that the head of a fetus should never be opened unnecessarily, upon a supposition of the existence of this complaint, for fear of a fatal mistake. When the fetus presents preternaturally, the hydrocephalous affection is sometimes not easily ascertained, till the labour is accomplished. On the 22d of May 1799, I was called to the assistance of a woman in labour, by a surgeon, who, after bringing down the feet and body of a dead child, was unable, by any force that he could safely exert, to extract the head. On examining the woman, I found the head of the fetus very properly turned, and its body smaller than the middle size. The lower jaw of the child having given way, in consequence of the attempts to deliver; and the neck not being likely to sustain the requisite force, without separating from the head, I introduced the vectis betwixt the *pubes* of the woman, and the

occiput of the fetus, and desired the surgeon to take hold of the lower extremities of the child, and to pull steadily and gently in the direction of the axis of the superior aperture, whilst I endeavoured to bring down the head with the instrument, mentioned above. During the first pain, the head, which was of enormous size, burst; a large discharge of water took place, and the delivery was almost instantly accomplished. The woman recovered very well afterwards.

The bulk of the head may be considerably increased likewise from a *tumour*. Prof. Sandifort has described and figured a steatomatous tumour of this kind, which is so large, that the head appears to rest upon it, as upon a pillow.*

2. The TRUNK of the fetus may be very considerably enlarged from the detachment of *gases*, by putrefaction;† or from a collection of *water* in

* Mus. Anatom. Tom. 127. "Fœtus ferme maturus cujus capitis parti laterali dextræ, deficiente auricula, tumor adhæret, qua caput respicit, concavus, & illud quasi intra capacitatem suam recondens, sic ut caput huic, tanquam pulvinari, incumbere videatur."—"dissectus vero substantiam, steatomati non absimilem, exhibuit." Vol. II. p. 122.

† I must beg leave to insert the following extract from Dr.

the *abdomen*;* or from a *tumour* affecting the *thorax*, *abdomen*, or *nates*. In the two former cases, the delivery will be impeded, but may, in general, be accomplished without having recourse to embryotomy, when the pelvis is well formed.

Denman's very valuable *Introd. to Midwifery*, as the directions, given for overcoming this obstacle, are judicious; and as a fact of considerable importance is mentioned, to which I shall have occasion hereafter to refer. "When the child is dead, and the total exclusion of it is prevented by the tumefaction of the body, or by any other cause, by passing a napkin or handkerchief round its neck, and taking both the ends in our hands, we shall be able conveniently to exert much force, and if we pull steadily, and in a proper direction, we shall usually succeed in extracting it. But, if we are yet foiled in our attempts, by turning the head on one side, we must endeavour to bring down one or both arms, which being included in the handkerchief, will allow us to pull with yet more force, and facilitate the passage of the body. *The greatest difficulty of this kind I ever saw, was in consequence of the inflation of the whole outline of the body from its putrefaction; and there was occasion for all the force I could exert; but in other cases I have succeeded better, by availing myself of the changes produced, by waiting and giving more time, rather than by the exertion of much force.*" Vol. II. p. 45.

* When the quantity of *gas* or *water*, collected in the thorax and abdomen of a dead fetus, is very great, it will be found useful to discharge it by means of a trocar, pushed into one or both of these cavities.

In the last case, although the pelvis be not at all deformed, it is sometimes necessary to employ embryotomy, when the presentation is preternatural, as will appear from the following account of a labour, which occurred to myself. More than ten years ago, I was sent for to a poor woman at Blacksnape, about five miles from Blackburn, whose pelvis was well formed, and whose former labours were by no means difficult. She was attended in this labour by a midwife, from whom I learnt that an arm presented, and that the *liquor amnii* had been discharged a considerable time before I was sent for. The uterus was contracted closely round the body of the fetus, and the *thorax* was situated at the superior aperture of the pelvis, but, as it was not impacted, or indeed much engaged, and the pains were not very powerful, I succeeded in introducing my hand and bringing down the feet into the vagina, with less difficulty than I had upon some former occasions experienced. Not being able to bring either of the feet through the *os externum*, I applied a ligature round each, and attempted to turn the child, but could not move it. I then took hold of the ligatures with one hand, and having introduced the other, I endeavoured with it to elevate the thorax, whilst I was pulling at the feet. This at-

tempt failing, I began to suspect, that there might be two children, and that I might have laid hold of the right foot of one and the left of the other ; I therefore passed my hand along the thighs of the child, and convinced myself that they belonged to the same fetus. I also satisfied myself, that the fetus had not more than four limbs. I then resolved to exert as much force as the fetus would bear, and in this attempt to turn the child, the lower limbs gave away. Finding it impossible to accomplish the delivery, in any other manner, through the natural passages, my next determination was to employ Embryotomy, I therefore sent a messenger for my instruments, and, in the mean time, deliberated upon the cause of the unusual detention of the child, and upon the plan to be pursued. I suspected monstrosity, but could not determine of what kind it was. On the return of the messenger, I proceeded in the following manner ; I first pushed the scissors into the *thorax* of the child, and, having eviscerated this cavity, I passed the scissors into the abdomen, and brought away part of the abdominal viscera ; but, apprehensive lest these steps should be insufficient to overcome the obstacle, I also separated two of the dorsal vertebræ, by insinuating the point of the scissors carefully betwixt them,

and thus broke through the continuity of the spine. Having done this, I was enabled to bring down the *nates* of the child, and the *thorax* and head were soon after extracted without any material difficulty. On examining this fetus, which was a female, I observed a very large protuberance at the *nates*, having the appearance of an elongation of the trunk ; insomuch that the lower extremities seemed, at first sight, as if placed on each side of the middle of the abdomen, the parts of generation and *anus* being conspicuous on the anterior part of the protuberance. See Pl. VIII. fig. 2. This protuberance, on being opened, was found to contain a considerable quantity of water, which was enclosed in several thick membranous cysts. There was no peculiarity of conformation in the pelvic *viscera*. Had the head of the fetus presented in this case, little, if any, difficulty would have arisen in the delivery, as the protuberance was scarcely of larger diameter than the rest of the trunk, and the inferior extremities might therefore have passed along with it. And, if the turning of the child had been attempted immediately after the membranes burst, I think it not improbable, that the delivery might have been accomplished without any extraordinary means. But, after the uterus was closely and firmly contracted upon the

body of the fetus, and the great length of the trunk was thrown across the superior aperture of the pelvis, it became impossible to move the child, till I had performed the operation of embryotomy. The mother bore the operation with great patience and fortitude, and seemed likely to do well at first; but, symptoms of inflammation of the cavity of the abdomen supervening, she died in less than a week.

The singularity of this monstrosity, and the trouble and anxiety, it had occasioned me, induced me to consult the writers of observations for a similar case; and I found that one nearly of this kind had occurred to Peu. “Ce qui faisoit la difficulté étoit une tumeur de figure ronde deux fois plus grosse que la tête de l’enfant située au bas de son épine, & qui occultoit l’os sacrum & le coccyx. La plus grande partie de la matiere, dont elle étoit composée, ressembloit a celle des Loupes, & le reste étoit une quantité des eaux” *Pratique des Ac.* p. 469. Viardel describes a somewhat similar tumour in a new born infant, “lequel avoit une difformité monstrueuse sur son corps en forme de citrovile longue & de coucombre, environ la partie posterieure du dos, laquelle dessendoit tout le long de la cuisse & de la iambe

jusqu' au talon, en forme de tumeur molasse, & remplie d' eau couverte des cinq tegumens, &c. &c." Obs. sur la Prat. des Acc. p. 247. And Portal has given three engravings of a fetus, whose abdomen was enormously enlarged, one of which is copied in Pl. VIII. fig. 1.

The monstrosity, arising from too great a number of parts, may present equal, or even greater impediments to delivery than the increased bulk of the fetus. Supernumerary fingers and toes being common occurrences, and not occasioning any difficulty to the accoucheur, I shall not notice them any further; but shall confine myself to the consideration of those cases of monstrous conformation, in which the additional parts are of considerable bulk, or in which two fetuses are attached together.

1. Some monsters have two heads, and are, in every other respect, naturally formed. An engraving of a monster of this kind is given in Prof. Sandifort's splendid work.* The two heads and necks, which are perfect, are placed upon the top of the *thorax*, and in the space betwixt

* Mus. Anatom. tab. 121.

the two heads, which is considerable, there arises posteriorly a tuberosity, with a broad base, and terminating in a point. But the supernumerary head is sometimes not placed in the natural situation. Peu informs us that he brought a child into the world with two heads, one of which was attached to the *os sacrum*.* And an account of a child with a double head, accompanied by an engraving, is given in the *Phil. Trans.* for the year 1790, by Mr. Home. In this case the upper head is inverted, and united to the other by a firm bony adhesion between their crowns. It does not appear, that the birth of this child was attended with any particular difficulty. It was born alive, and, although the midwife, terrified at the strange appearance of the double head, threw it upon the fire, it lived till it was two years old, and then died from the bite of a *Cobra de Capello*. In a subsequent account, it is said by Mr. Dent to have been more than four years old at the time of its death.

2. A Fetus is described and figured by Dr. Bland, which “ had two heads, two necks, four hands and arms, two spines, uniting at the sacrum and terminating in one pelvis, from whence the

* *Pratique des Acc.* p. 465.

lower extremities proceeded single; there was one navel-string, and one male organ of generation."* And an account is given by Dr. S. Morrist of a monstrous female, which had all the parts double above the diaphragm, and single below.

3. Dr. Sandifort has given a description and figure of an infant,† to whose *abdomen*, a little below the *umbilicus*, two additional inferior extremities, perfectly formed, are attached.

4. Two fetuses, more or less perfect, have been found connected together in various ways.

a) A monster of this kind occurred to Mr. Dutton and Mr. Hall, of Manchester, which is represented in Plate IX. To the latter of these gentlemen I am indebted for the following account of it, and the engraving. "When the subject was laid upon a table, it naturally took the inclination, which the engraving represents, by which one child seems quite to intersect the other, and has only one leg with a double foot.

* Philos. Trans. Vol. 71. † Ibid.

† Mus. Anat. Tab. 125.

The soles of the feet are closely connected; the right foot has the four small toes; but the left has only three; and there is one large toe between them. The two heads and four arms are perfect, as also the two legs, which belong to the child with the larger head, and which was first born. The ribs are united at the extremities and form only one thorax, of which every viscus is double. The heart of the left child was remarkably flat, and being thrown to the left side, the two *pericardia* were united. There was only one diaphragm. One liver, so large as to extend over the whole surface of the diaphragm. One spleen. Two stomachs, and two sets of intestines, uniting in one *rectum*, which was greatly distended with *Meconium*, and terminated in an almost imperforated *anus*. Four kidneys, the left and right of each child lying near together were exceeding small, but the other two were four times the size. Two genitals of females. The one *uterus* much larger than the other. The *meatus urinarii* were so dilated, as to admit my little finger, and, opening into each *vagina*, they, with the two bladders, were all greatly distended with a yellowish liquor, and a sort of coagulum. There was but one pelvis, composed of a double set of bones, the *pubes* forming regular arches before and behind.

There was only one *funis*. The single *placenta* was large, and remarkably thick. On half of its surface the veins were distended like sinuses; on the other half was scarcely the appearance of a blood-vessel, probably owing to the pressure of the child upon it."

b.) Prof. Sandifort (Mus. Anatom. Tab. 116 and 117.) has given a fore and back view of two negro fetuses, which adhere together from the top of the *thorax* to the bottom of the *abdomen*. Two of the inferior extremities are natural; one is deformed; and of the fourth there is only a slight vestige.

c.) The same celebrated writer has given two views of two female fetuses, cohering by the *abdomen* only. There is the vestige of one common *funis umbilicalis* only (Tab. 118 and 119). The limbs are all present. See Plate X.

d.) He has also figured two very perfect and beautiful female fetuses, cohering only from the inferior part of the *thorax* down to the *umbilicus*. (Tab. 120 and 121). The common *funis umbilicalis* is seen at the bottom of a sac. See Pl. XI. These fetuses appear to be united only by the soft parts.

When a fetus has an additional number of extremities, it may puzzle the accoucheur, if the presentation be preternatural; but it will rarely, if ever, be necessary, on this account, to have recourse to extraordinary means, in order to effect the delivery of the parent.

When a fetus has two heads without any other supernumerary parts, if the pelvis be capacious and the heads small, the delivery will be rendered laborious; but will, in some cases, be accomplished by the natural efforts. In other cases it has been found necessary to open one or both heads with the perforator, and extract with the crotchet; or one head has been entirely removed.*

When a fetus is double as low as the diaphragm, unless it be small, it can scarcely be expected to be born entire in whatever way it shall present. It will, generally, be necessary, when one of the heads and part of the *thorax* is born, to separate the latter as near as possible to the junction; the remaining part will then be a single fetus, which may be extracted by embryotomy; or by intro-

* See Roederer El. Art. Obst. § 570.

ducing the hand, and bringing down the feet of the child. If a fetus of this kind present preternaturally, it will often be necessary, as soon as the *abdomen* is brought through the *os externum*, to employ the scissors, and blunt hook, or crotchet, for the purpose of removing the thoracic *viscera*; and it may sometimes become necessary afterwards to separate one *thorax*, with the upper extremities and head, from the other *thorax*, before the delivery can be accomplished; or to open one of the heads and extract it with the crotchet.

When there are two nearly entire children, connected by a greater or less portion of their trunks, if they be of small size, they may be expelled by the natural efforts; but if they be of full size, we can scarcely expect to bring them into the world, without separating them, or at least, removing some of their parts:*. And this will be

* Plenck is of opinion, that if the twins, which are thus connected, be alive, hysterotomy ought to be performed. "At si gemelli concreti simul nimio volumine peccent, tunc partus redditur impossibilis, nisi sectione cesarea, si gemelli adhuc *vivi*, aut evisceratione, si *mortui* sunt, eximantur." El. Art. Obs. p. 149. But if they can be extracted with more safety to the mother by embryotomy, I think this operation should be preferred, notwithstanding their being alive.

more easily effected, when they cohere by the soft parts only. A different mode of proceeding will be necessary according as a monster of this kind presents naturally or preternaturally. In the former case, the method, adopted by Mr. Dutton and Mr. Hall, was very proper and successful; and I shall, therefore, transcribe Mr. Hall's account of the delivery of the monster, which occurred to them, and which is mentioned above.

“On October the 3d, 1786, Mr. Dutton was called to Mrs. E., whom he attended for fourteen hours, in her labour, and at her full period of gestation. The waters collected in good quantity before they broke, when the head of the child advanced slowly, and was born without any very violent, but frequent short pains. A few pains more expelled the arms, when there seemed to be some particular obstruction to farther delivery. Having remained in this state for two hours, Mr. D., under anxiety for his patient, requested my attendance. His description of the difficulty made me offer a conjecture, that there might be a junction of two children, recollecting a similar instance, that once occurred to my fa-

Indeed, the life of twins, thus circumstanced, is by no means desirable.

ther. I was soon confirmed in my opinion ; for, being able to pass my hand, I found a third arm, and traced the union from one head to the other. We hesitated some time for the proper mode of delivery, when Mr. D. proposed to remove the head that was already born,* and requested me to release him from the fatigue he had undergone, and proceed in the operation. I therefore separated the head and right arm ; afterwards fixing the crotchet in the inside of the *thorax*, I brought away some of the ribs. This gave me considerable advantage, as I was able to get my hand within the body of the child ; for, finding that the bulk must be considerably reduced, I introduced the scissars within the body, and divided the *vertebræ* at their union with the *sacrum*, by which I drew out the whole spine. I now considered it as a single preternatural case ; when passing my hand to deliver by the feet, I met with a fourth hand, and what I imagined to be a fifth. This proved to be the double foot, and I mistook the toe, from its particular situation, for a thumb. I searched further for the feet, which were quite at the *fundus uteri*, and brought one down with some

* This head is the larger, and belongs to the child with the two perfect lower extremities. See Pl. IX. f. 1. 2. a. a.

difficulty. On this I fixed a ligature, which Mr D. secured, whilst I got the second foot. He then assisted me in the extraction, and the birth was suddenly completed at last, though it had required my close attention for two hours. She was a woman of rather low stature, and had born three children before. Her burden had been remarkably heavy in the last months, and she had always said she carried twins; which, had they been separate, would have been called large children. Her recovery was good, attended with no other symptoms than are usual, after fatiguing long labours."

If this monster had presented originally with the two well-formed feet, or if it had presented preternaturally, and these two feet had been brought down, it is most probable, that little difficulty would have arisen, till the *nates* had been brought through the *os externum*. An impediment would then have arisen from the *thorax* of the less perfect fetus, which is placed transversely. This would have led the accoucheur to inquire into the cause of the detention, by the introduction of his hand; and he would then have perceived, that it arose from the concretion of two fetuses. Considering it proper to endeavour

to bring away the child as entire as he could, whose lower extremities were born, he would endeavour to detach the upper part of the other fetus from it, by employing the scissars and crotchet; removing part of the *viscera*; and separating the spine. He would then push up this detached half of the fetus above the superior aperture of the pelvis, and proceed to extract the child, which was in part born, and with this would bring away the lower part of the fetus, that was left in the uterus. Having accomplished this, he would with the blunt hook, or the crotchet, introduced into the thorax, extract the remaining half of the fetus, in doing which he would most probably meet with little difficulty.

In performing this operation, as well as that of embryulcia, much will depend upon the operator's proceeding with great caution and steadiness. He should carefully avoid wounding, or bruising the mother with any of the instruments employed; he should bring away every piece of bone with great care, and, before he begins to extract the child, he should studiously remove every projecting portion of bone, that might be likely to lacerate the *uterus* or *vagina*.

Hitherto I have been considering the mode of delivery, to be adopted in cases of monstrosity simply. But it may happen, that monstrosity of the fetus may be complicated with tumours, and other affections of the soft parts of the mother; or with deformity of the pelvis. And, according to the extent of these affections, it will be necessary to reduce the bulk of the monster more completely by embryotomia and embryulcia; or even to have recourse to hysterotomy.

And it is to be remembered as a general rule, that this last operation may be indicated from the concurrence of two circumstances, neither of which, taken singly, would have required it.

In consequence of the causes of difficult parturition, just enumerated, or of a defect of pains merely, &c. the Cesarean Section has been very frequently performed. I have already given an account of the event of seventeen cases, that have occurred in Great Britain and Ireland, in three Synoptical Tables.* And I shall now proceed to lay before you a tabular view of all the successful and unsuccessful cases, with which,

* See Defence of the Cesarean Operation, &c. p. 66—68.

I am acquainted, wherein the Cesarean Operation has been resorted to in other parts of the world. I wished to include in these tables an account of *all* the cases that have ever occurred: But this has not been in my power. The Memoir of M. Baudelocque, which I have not yet been able to procure, contains 73 cases, that have happened since the year 1750, and, consequently, comprehends many, with which I am unacquainted. I wished also to adduce a more circumstantial account of many of the cases, than is given in my tables: For some of them are defective in the *dates*; others in the *names* of the parties; and others in every material circumstance, except the event. But after taking much pains, I have found this to be impracticable; because of some of the cases no particular account has been recorded; and of others I have not had access to the original histories, having been obliged to form the principal part of my tables from the cases, collected by Rousset, Bauhin, Simon, Lauverjat, Eysold, Baudelocque, Richter, &c. &c. I could have added considerably to the number of the successful cases, by admitting those operations, that have been performed, for the extraction of fetuses from the cavity of the abdomen, after nature

has pointed out the mode, in which she might be relieved, by exciting suppuration or ulceration in some point of the abdominal *parietes*: But I have studiously excluded every case of this kind, even those in which an *entire* fetus has been extracted.

TABLE I. Successful Cases of Cesarean Births.

Case.	Year.	Names of the Operators.	Names of the Patients.	Duration of Labour.	State of the Patient.	Event of the Operation, with respect to the child, &c.
1	1500	Jacques Nufer, of Siegerhausen.	E. Alespachin, his own wife.	Several Days.	Many fruitless attempts had been made to deliver her. No further account.	The child was born alive. The wound was stitched, and united without any bad symptoms.
2-7	—	N. Guillet, of Milly.	— Godard, of Mesnil, in the Parish of Milly.	No Account.	No Account.	This poor woman was delivered six times by the Cesarean Operation, and all the children preserved. She died in her seventh labour, Guillet being dead, and nobody to be found, who could deliver her.
8-10	—	Amb. Le Noire, and G. Le Brun.	— at Merinville, in Beause.	No Account.	No Account.	The Operation was performed three times upon her, and the three children preserved.
11	—	J. Des Marais, of Chastre, in Berry.	His own wife.	No Account.	No Account.	The child born alive. This woman afterwards had a natural labour.
12	—	M. Debonnaire.	— in Anjou.	No Account.	No Account.	The case communicated by M. Pelion, M. D. at Angier, to L. Colot, Surgeon.
13	—	No Account.	— in a Village in Burgundy.	No Account.	No Account.	This woman was examined by Rousset, and D. Armenaut, in the hospital of Châtillon. The child was then seven years old.
14	1542	Vincent Valteau.	M. De la Garde, of Aury in Biere, near Fontainebleau.	No Account.	No Account.	A dead and fetid fetus was extracted. The incision was made in the left side, the lips of the external wound were kept in contact by five stitches. This woman laboured naturally afterwards.
15	1544	Ph. Migneau.	Agnes Compain, of Villereau.	Four days.	No Account.	The child was alive. The incision was made in the right side, the wound was stitched, and soon healed. This poor woman was attended in her next labour by two surgeons from Neuville, who could not be prevailed upon to perform the Operation, and she died undelivered.

TABLE I. continued. Successful Cases of Cesarean Births.

Case.	Year.	Names of the Operators.	Names of the Patients.	Duration of Labour.	State of the Patient.	Event of the Operation, with respect to the child, &c.
16	1556	John Lucas, of Bunon.	B. Arnold, of Nangeville.	Four Days.	Pains very strong. No particulars are related.	A living child was extracted. The incision was made in the right side. The wound had five stitches. The woman was afterwards troubled with a hernia in the part, and laboured naturally.
17	1576	Ad. Aubrey, of Aubigny.	Ant. Garnier, of Ambedoye.	No Account.	No Account.	No particular circumstances are given.
18	1578	Ad. Aubrey, and Wm. Colas.	Johanna Michel, of Argent.	Had been long in labour.	An arm presented.	The child dead. The wound made in a circular direction in the right side. She laboured naturally afterwards.
19	1582	J. Jacotin, of St. Maurice.	Ant. David, Parish of Merry.	Four days.	No Account.	The child was extracted alive. The incision was made in the right side of the abdomen, and stitched.
20	—	J. Jacotin.	— near St. Benedict.	No Account.	No Account.	No particulars are given.
21	—	J. Jacotin.	— at Pontaille, in Burgundy.	No Account.	No Account.	The child alive.
22	1582	John Lucas.	Fr. Grignon, at Ouyville.	No Account.	No Account.	It is not stated, whether the child was born alive or not.
23	1582	A. Robin.	— of Marsilli, in Burgundy.	Two days.	No Account.	The child lived only a short time.
24	—	Leodogar Petit.	— Exuperia, of Fur-neville.	No Account.	No Account.	The child lived about fifty hours. The incision was longitudinal, & inclined to the left side. The external wound was stitched, but the ligatures were torn out, owing to the imprudence of the patient.
25—26	Before 1772	No Account.	— two women at Castelnaudary.	No Account.	No Account.	These two women were examined by Sc. Mercurii. See La Commare, &c. p. 207.

TABLE I. continued. Successful Cases of Cesarean Births.

Case.	Year.	Names of the Operators.	Names of the Patients.	Duration of Labour.	State of the Patient	Event of the operation, with respect to the child, &c.
27-33	—	Sonnus, M. D. of Bruges.	His own wife.	No account.	No account.	The cesarean operation performed 7 times with success upon the same woman. See Roonhuysen's Obs de Morb. Mul.
34	—	Ol. Rudbeck.	His own wife.	No account.	No account.	No particulars are given.
35-39	—	No account.	—the wife of a Surgeon at Paris.	No account.	No account.	Th. Bartholin relates (De insolitius humani viis,) that he knew this woman, who underwent the operation 5 times.
40	1627	No account.	— Messemey, near Lyons.	Several days.	No account.	The child preserved. This case is given on the authority of L. Panthot.
41-43	Before 1637	No account.	No account.	No account.	No account.	The operation performed 3 times on the same woman.
44-49	Before 1637	No account.	— at Aucois.	No account.	No account.	The operation performed six times on the same woman. The account given by M. Pellaire, M. D. at Maurienne in Savoy. For an account of the cases 40-49, see Th. Raynaud De Ortu infantium, &c. 1637.
50	1692	No account.	— at Chateau-Thierry.	No account.	No account.	This woman died in the Hôtel-Dieu in Paris, of a ventral hernia, (the consequence of a cesarean section). Her body being opened, a cicatrix was found in the uterus, occupying its whole thickness, and corresponding with that of the integuments. The case is related by Saviard, who attended her. See Journal des Scavans. 1692.
51-52	—	No account.	— at Chateau-Thierry.	No account.	No account.	The first child born alive. It is not stated, whether the second was alive or dead. This woman underwent two cesarean operations in twenty months, and

TABLE I. continued. Successful Cases of Cesarean Births.

Case.	Year.	Names of the Operators.	Names of the Patients.	Duration of Labour.	State of the Patient.	Event of the operation, with respect to the child, &c.
51-52						recovered very well. Related by M. Jobert, M. D. at Chateau-Thierry, in the <i>Journal des Scavans</i> .
53	Before 1693	No account.	No account.	No account.	The patient had a large tumour in the vagina.	No account is given of the child. G. Lankisch, M. D. at Zittan, recommended the operation, and has related the case in the <i>Act. Erud. Lips.</i> 1693.
54	Before 1695	No account.	No account.	No account.	The vagina filled with callosities.	This case is mentioned by Ch. Vater, in his <i>Diss. de Partu Ces.</i> 1695.
55	About 1704	Mr. Ruleau, of Xaintes.	No account.	Five days.	Pelvis so distorted as not to admit two fingers.	The patient recovered very well; hemorrhage very slight. See Ruleau's <i>Traité de l'Op. Ces.</i> 1704.
56	—	— of Pont-l-Abbé.	— at Imfreville, near Valognes.	Three days.	The child presented an arm.	The child was dead, one arm having been torn off by the midwife. The woman, though ill attended, recovered.
57	—	— a Surgeon at Caudette.	Mad. Gourdain, of Caudette.	Three days.	This woman appears to have been operated upon without any necessity.	The child was preserved. The wound was in a longitudinal direction, about three fingers breadth from the <i>umbilicus</i> , and healed in three weeks.
58	—	M. L'Amiral, of Marigny.	Name not given.	Very long.	No account.	The child saved. The incision made in the left side of the belly, and healed in fifteen days.
59	—	The same.	The same.	No account.	Long and sharp pains. No further account.	Event fortunate. This woman was seen by M. De La Peyronie about a month after the second operation.
60	—	M. De Thise, of Buré.	— Dutchy of Luxemburg.	No account.	No account.	The child preserved. The mother was well in three weeks.

TABLE I. continued. Successful Cases of Cesarean Births.

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Case.	Year.	Names of the Operators.	Names of the Patients.	Duration of Labour.	State of the Patient.	Event of the Operation, with respect to the child, &c.
61	—	M. De Laise, of Buré	— at Rochefort, near Liège.	No account.	No account.	She lived two years after the operation.
62	—	The same.	— At Ave, Duchy of Bouillon.	No account.	No account.	She recovered slowly. It is not mentioned, whether the children were preserved in the two last cases.
63	—	M. Brou, of Bauville-le-Comte.	M. La Roche, of the same place.	No account.	No account.	The child preserved. The mother was examined by M. De La Faye afterwards.
64	1726	M. Noyer, of Isserteaux.	M. Espirat, at Bourzis.	No Account.	No Account.	The child had been dead several days. The wound was stitched, and healed in seventeen days. She died undelivered in her next labour, M. Noyer being absent.
65	1723	Mad. Flandrin, of Bulle.	M. François.	Seven days.	The crotchet had been employed without success.	The operation was recommended and attested by M. Michel. She recovered without any accident.
66	1738	M. De Bliere, of Liege.	M. De Storheaux, of Spa.	No Account.	The patient in great danger; the presentation preternatural.	The child dead, before the operation was performed. The incision longitudinal. No hemorrhage. The lochia in small quantity, and discharged per vaginam.
67	1740	M. Soumain, of Paris.	M. Desmoulins.	Three days.	The patient only three feet one inch high. The pelvis much distorted.	The child was born alive. She lost little blood; and went to church in 47 days after the operation.
68	—	M. Le Conté, of St. Le.	— at Hambrie, near Coutances.	No Account.	No Account.	No particulars stated.
69	1746	M. Guenn, of Jepy, in Valois.	—	—	—	The incision was longitudinal, and made near the Linea Alba. Gasiroraphy was employed, and the patient was well on the 19th day.

TABLE I. continued. Successful Cases of Cesarean Births.

Case.	Year.	Names of the Operators.	Names of the Patients.	Duration of Labour	State of the Patient.	Event of the operation, with respect to the child, &c.
70	1749	M. Guenin.	—	—	—	In the former case the operation was indispensably necessary; but not in the latter case. See Guenin's Hist. de deux Oper. &c. 1750.
71	—	No account.	—	No account.	No account.	The particular circumstances of these two cases are not given. They were communicated by M. Cabany, Memb. of the Academy, &c. who saw the woman.
72	—	No account.	at Givet. The same.	No account.	No account.	
73	—	M. Buyrette.	at St. Menehould.	No account.	Rickety.	No particulars are related.
74	—	No account.	No account.	No account.	No account.	Respecting this case, which was communicated to the Academy by M. Cayne, Chief Surgeon of the Hotel-Dieu at Reims, no particulars are given.
75	—	M. Sanson.	at Roiville-sous-Auneau, Diocese of Chartres	No account.	No account.	The incision was made in a transverse direction, and was completely successful.
76	1769	M. Lebas, of Mouilleron.	wife of a Farmer.	Four days.	Much debilitated.	The wound of the uterus was transverse, and was closed by three stitches.
77	—	A Surgeon at Attichi.	No account.	No account.	No account.	The incision was made in a transverse direction in both these cases. This surgeon is known to M. Baudelocque.
78	1772	The same.	No account.	No account.	No account.	
79	1782	M. Lauverjat, of Paris.	M. Baufels.	No account.	Rickety. Pelvis distorted.	The child was alive. The incision was transverse. The uterus was interposed between the lips of the wound, when it first healed; but in the seventh month it receded perfectly into the abdomen.

TABLE I. continued. Successful Cases of Cesarean Births.

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Case.	Year.	Names of the Operators.	Names of the Patients.	Duration of Labour.	State of the Patient	Event of the operation, with respect to the child, &c.
80	1787	M. Lauerjat.	Mrs. D.	No account.	The pelvis contracted. The head, hand, and <i>funiculus</i> presenting.	The incision was transverse, and, though it was made in that part of the uterus, where the placenta was attached, little blood was lost. The lochia were discharged <i>per vaginam</i> : And the cure was completed in a month, without any very dangerous symptoms.
81	—	M. Vimar.	His own wife.	No account.	No account.	No particulars are related.
82	—	M. Chabrol.	Mad. Valandrie.	No account.	No account.	The incision was cruciform.
83?	—	M. Zimmerman, of the regt of Esterhazy.	Countess of Chezy.	No account.	No account.	Two living children, one of which is said to have had three heads.
84	—	M. Vermont, of Paris.	No account.	No account.	No account.	Two living female children.
85	1774	M. Millot, of Paris.	—	—	—	I have not met with the particulars of this case, which is published by M. Millot.
86	1779	M. Deleurye, of Paris.	—	—	The pelvis distorted. The <i>liquor amnii</i> had been discharged about 14 hours.	The incision was made in the <i>linea alba</i> , a tent was left in the lower angle of the wound, and the uniting bandage applied. On the fourth day, the uterus and part of the omentum appeared in the wound. This woman got well within a month. She and the patients of M. Millot, and Deleurye, and the two patients of M. Lauerjat, were all living in Paris, at the time the last named author published his work on the cesarean operation in 1788.
87	—	Mr. Trouard, of Dieppe.	— at Dieppe.	No account.	No account.	The mother recovered very soon. The fate of the child is not mentioned.

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Case.	Year.	Names of the Operators.	Names of the Patients.	Duration of Labour.	State of the Patient.	Event of the Operation, with respect to the child, &c.
88-94	—					Count Tressan relates, that one woman had the cesarean operation performed seven times upon her. The incision was always made in the left side, and in the same place. He saw her on the fourth day after her seventh operation. <i>Journal de Med. Tom. 36. 1782.</i>
95	—	M. H. Stark.	—	—	The pelvis much distorted	The child was born alive. The incision was made in the <i>linea alba</i> , & bled freely, but was soon stopped. A tent was put into the wound, and only sticking plaister and a bandage employed. A portion of intestine was found protruded and inflamed in the wound, which healed in about nine weeks. The lochia passed naturally. <i>Einrichtung des klin. Instit. Jena. 1782.</i>
96	—	M. Hennaquin.	No account.	No account.	The fetus presented the elbow and <i>funis</i> . The pelvis was very narrow.	The child was dead. The operation was performed on the right side, and scarcely any blood was lost. A portion of the omentum, which protruded at the wound, and was gangrenous, was removed.
97	—	M. Pietsch.	No account.	No account.	The pelvis very narrow.	A moderate hemorrhage took place from the <i>A. Epigastrica</i> , which was easily suppressed by the application of a styptic. Gastrotomy was performed.
98	—	M. Warroquier, of Lille.	No account.	No account.	No account.	The incision was made in a longitudinal direction, and in the <i>linea alba</i> .

98	—	M. Warroquier, of Lille.	No account.	No account.	No account.	direction, and in
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TABLE I. continued. Successful Cases of Cesarean Births.

Case.	Year.	Names of the Operators.	Names of the Patients.	Duration of Labour.	State of the Patient.	Event of the Operation, with respect to the child, &c.
99	—	M. Leber.	—	—	The pelvis very narrow. This woman had had three children, all of whom were dead born.	The child was born alive. The incision was made in the right side, and closed by the quilled suture. A tent was put into the lower angle. <i>Mohrenheim's</i> Beyträge, &c. 1781.
100	—	B. Ronsæus.	—	—	The child affected with <i>hydrocephalus</i> .	I have not met with any particulars of this case. <i>Epistolæ</i> , &c. Leid. 1790.
101	Before 1562	No account.	No account.	No account.	No account.	André Doria was brought into the world by the cesarean section, according to A.M. <i>Venosta</i> . <i>Discorso generale intorno</i> <i>alla generazione</i> &c. Venet. 1562.
102	Before 1627	No account.	No account.	No account.	No account.	The child was dead The case is re- lated by Ph. Hochstetter in his <i>Rar. Obs.</i> Dec. 6, 1627.
103	1621	First Surgeon of the Bicêtre, in Paris.	No account.	No account.	A woman affected with <i>Siphylis</i> .	Related by H. Schuzer, who saw the operation. <i>Schwed. Abhandl.</i> B. 30.
104	Before 1721	M. Prevost.	at Puisieux, in Gati- nois.	No account.	No account.	Mentioned by De Launay in his <i>Nouv.</i> <i>Syst. de la Gen. de l'homme.</i> Paris 1721.
105	1782	M. Brand, of Leyden.	J. Boxmeer, of Leyden.	—	Pelvis distorted.	The child was preserved. The incision was made in the right side, where the placenta was attached. The wound was stitched, and a tent placed in the bottom of it. See <i>Defence of the Ces. Oper.</i> p. 98.
106	—	M. Thibaut.	—	—	Ruptured uterus.	The operation of gastrotomy was per- formed, and the patient recovered very well. The child was not preserved. See <i>Defence</i> , &c. p. 74.

TABLE I. continued. Successful Cases of Cesarean Births.

Case.	Year.	Names of the Operators	Names of the Patients.	Duration of Labour	State of the Patient.	Event of the operation, with respect to the child, &c.
107	1775 1776	M. Lambron. The same.	— Dumont. The same.	—	Ruptured uterus. The same accident.	The operation of gastrotomy twice performed on the same woman. In the first case the child was dead, owing to the operation being too long delayed. In the second case the child lived about half an hour. See Defence, &c. p. 75.
108	1769	A Negro Woman in Jamaica.	Herself.	No account.	—	The incision made in the left side near the <i>linea alba</i> . See Defence, &c. p. 78.
109	1779	Dr. Fritse.	— Schulers, of Offdillen	—	Wounded uterus.	The woman was well in two months. See Defence, p. 82.
110	1785	Dr. Zubeldia.	M. Gratien.	—	Wounded uterus.	The child dead. The woman was cured in about six weeks. See Defence, p. 80.

Case.	Year.	Names of the Operators.	Names of the Patients.	Duration of Labour.	State of the Patient.	Event of the operation, with respect to the child, &c.
1	—	Guillemeau.	No account.	No account.	No account.	No particular circumstances are related.
2	—	Guillemeau.	No account.	No account.	No account.	It is not even mentioned, whether any of the children were born dead or alive.
3	—	M. Viart.	No account.	No account.	No account.	See Guillemeau De la Grosse, &c. p. 228.
4	—	M. Brunet.	No account.	No account.	No account.	
5	—	M. Charbonnet.	No account.	No account.	No account.	
6	—	No account.	No account.	No account.	No account.	Nothing more is said with respect to these three cases than that they were unsuccessful. See Alex. Masseria Pract. Med. Franc. 1601.
7	—	No account.	No account.	No account.	No account.	
8	—	No account.	No account.	No account.	No account.	
9	1758	M. Schulzer.	a Dwarf.	Three days.	Pelvis so narrow as scarcely to admit two fingers.	The operation was performed on the left side, and very little blood was lost. The lochia passed naturally, and she appeared to recover very well, till, through her own imprudence, she was attacked with a diarrhæa, which carried her off on the sixth day.—The abdominal wound was nearly healed. The uterine wound was also nearly healed. There was no blood effused into the abdomen; and no diseased appearance is mentioned. Ab-hand. der Schw. Ak. B. 30. S. 242.
10	About 1772	M. Henkel.	—	—	Pelvis contracted.	The operation was performed in the <i>linea alba</i> , and very little blood lost. No suture was employed. The <i>lochia</i> passed <i>per vaginam</i> . On the third day a vomiting took place, and the intestines were found protruded at the wound. She died on the fourth day. On dissection the intestines were found adhering to each other, the <i>omentum</i> and stomach were inflamed. The uterus was not inflamed, and the wound was small; nor was there any

TABLE II. continued. Unsuccessful Cases of Cesarean Births.

Case.	Year.	Names of the Operators.	Names of the Patients.	Duration of Labour.	State of the Patient.	Event of the Operation, with respect to the child, &c.
10						any extravasated blood in the abdomen. <i>Henkel's</i> Med. and Chir. Anmerk. Berlin 1772.
11					Presentation preternatural; the child was turned, and the body separated from the head. The same accident	In these two cases, which are given by M. Larrouture, in the Journ. de Med. Tome 68, the heads of the children were extracted by hysterotomy, and the parents died soon after.
12					Constitution good. Pelvis distorted.	The incision was made in the <i>linea alba</i> . The wounds bled very little. No suture was employed; the omentum, intestines, and uterus protruded at the wound, and the mother died on the fourth day. The body was not opened.
13	1773	M. Lauerjat, Paris.	M. Monginot.			
14	1781	M. Lauerjat.	L. E. Debric.		Only 38 inches high. The right diameter of the superior aperture of the pelvis measured 15 lines with the soft parts, and 17 lines when these were removed.	The child was born alive. The incision was made in the <i>linea alba</i> . The omentum protruded at the wound. The mother lived one hundred hours after the operation. On dissection the colon was found inflamed. The anterior part of the uterus, its inner surface, and the edges of the wound had marks of superficial inflammation. The neck of the bladder was inflamed.
15	1777					A twin case. It is not stated in the account, which I have seen, whether the children were alive. The history of this case is given by M. Sommer, of Brunswick.

TABLE II. continued. Unsuccessful Cases of Cesarean Births.

Case.	Year.	Names of the Operators.	Names of the Patients.	Duration of Labour.	State of the Patient.	Event of the Operation, with respect to the child, &c.
16	—	Apupil of M. Solayres	—	—	—	The incision was made in the <i>linea alba</i> . No account is given of the child.
17	—	M. Deleurié.	—	—	—	The incision was made in the <i>linea alba</i> . It is not said, whether the child's life was preserved.
18	—	M. Moreau.	—	—	—	The fate of the child is not mentioned. The incision was made in the <i>linea alba</i> .
19	—	G. W. Stein, M. D. of Cassel.	—	Strong pains for 30 hours.	She had had three children, dead-born. Her pelvis was distorted. This was her fourth pregnancy.	The life of the child was preserved: But the operation was performed too late to save the mother. The incision was made in the left side. Little blood was lost. The patient scarcely complained during the operation. She died on the second day. On dissection the abdominal viscera were found free from inflammation, except that the inner surface of the uterus was inflamed, and its <i>cervix</i> was gangrenous.
20	—	G. W. Stein.	—	Strong pains for 24 hours.	She was much indisposed during her pregnancy, and was affected with <i>siphylis</i> .	The incision was made in the right side, and the placenta was cut through, yet not more than a pound of blood was lost. Vomiting supervened, and the wound became inflamed and gangrenous. The patient died on the sixth day. On opening her body, a large abscess was found between the stomach and spleen.

TABLE II. continued. Unsuccessful Cases of Cesarean Births.

Case.	Year.	Names of the Operators.	Names of the Patients.	Duration of Labour.	State of the Patient.	Event of the Operation, with respect to the child, &c.
21	1785	M. Baudelocque.	A. Fouard.	—	Ricketty, about three feet five inches high; her spine distorted; her pelvis narrow. She was in a proper state for the operation.	The child was saved. The mother died on the fourth day after the operation, which was performed in the <i>linea alba</i> .
22	1786	M. Baudelocque.	—	—	Her constitution bad, so that no hope was entertained of preserving her life.	The child was preserved. The incision was made in the <i>linea alba</i> ; and the mother died on the fifth day.
23	—	G. W. Stein, of Cassel	—	Thirty hours.	Her twelfth pregnancy. The pelvis extremely distorted, in consequence of <i>Malacosteon</i> . The abdomen was very pendulous.	The child was saved. The incision was made in the left side. The woman died on the third day. On dissection, the <i>omentum</i> was found fixed in the wound of the uterus; there was nothing preternatural in the other viscera, and scarcely four oz. of bloody liquid in the abdomen. The wound of the uterus was not in the left side, as might have been expected, but more on the right side through the <i>fundus</i> , two inches from the left <i>tuba fallopiiana</i> , and only half an inch from the right. Marks of slight inflammation appeared on the posterior surface, and in the cavity of the uterus, and, on the right <i>t. fallopiiana</i> . Stein's <i>Geschichte einer Kaisergeburt</i> . Cassel. 1783.

TABLE II. continued. Unsuccessful Cases of Cesarean Births.

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Case.	Year.	Names of the Operators.	Names of the Patients.	Duration of Labour.	State of the Patient.	Event of the operation, with respect to the child, &c.
24	1787	F. Haas, M. D. Cologne.	Lucy Franzin.	—	A dwarf, much debilitated, and dropsical. Her pelvis and the soft parts much contracted.	She scarcely lost two ounces of blood in the operation. She lived nearly four days. A small quantity of coagulated blood was found in the abdomen. The uterus, omentum, and peritonæum, were found inflamed.
25	—	M. Bonnard, of Hesdin.	—	—	The pelvis much contracted. The section of the symphysis pubis was attempted, but not completed.	The life of the child was preserved. The mother lived eight days, and her death is attributed to want of care, and a diarrhæa, rather than to the operation. <i>Journal de Med.</i> for 1778.
26	1778	Prof. Siebold.	Cath. Koch.	—	Ricketty, and had a siphylitic complaint.	The child was extracted alive. The incision was made in the right side. A vomiting took place, produced a hæmorrhage, and forced the omentum and intestines out of the wound, which was not stitched. She died on the seventh day. The omentum and intestines were found inflamed and gangrenous.
27	1782	M. Terne, of Leyden.	— at Stompwyk.	—	The pelvis distorted.	The child was dead. There was no effusion of blood into the abdomen. The wound of the uterus was much contracted. Her death is attributed to an inflammation of the colon, symptoms of which appeared before the operation.

The first of these Tables comprehends a short account of 110 cases of the performance of the Cesarean Operation, and the third Synoptical Table, given in the 69th page of my Defence &c, contains two, which, added together, make 112 successful cases. The second Table contains 27 unsuccessful cases, which, with the 15 cases, contained in the first and second Synoptical Tables, given in my Defence &c. p. 66 & 67, and the case, which has since occurred in the Lying-in Hospital at Manchester, make 43 cases, wherein the mother has died after the Cesarean Section. Now, if we subtract the number of the unsuccessful from that of the successful cases, we shall find, that the latter exceed the former by 69.

The proportion of successful cases is not so great in the collection, made by M. Baudelocque, which comprizes only the cases, that have occurred since the year 1750: For out of 73 women, only 31 were preserved by this operation.* The unsuccessful cases, therefore, exceed the successful by 11.

Baudelocque remarks, that many of the women

* See the note in page 101.

were in a hopeless state, before the operation was undertaken; so that, from whichever collection of cases we make a calculation, it will be found, that a reasonable expectation of success may be entertained from the operation, when the mother's life is not endangered, previously to the performance of it. I shall have occasion to enter more particularly into this subject hereafter, when I come to speak of the sources of danger, attending the operation.

Having already described the different methods of performing Hysterotomy, when the external incision is made longitudinally, in the *Linea Alba*;* when it is made in a transverse direction;** and also when it is made obliquely;† it will not be necessary for me to detail again minutely every step of these operations: But I shall, in the next place, enter into the consideration of some circumstances, relative to Hysterotomy and Gastrotomy, which have either not been noticed by me before, or concerning which I have not yet stated my opinions fully.

* See Defence of the Cesarean Operation, p. 178.

** Ibid. p. 168. † Ibid. p. 191. See also above, p. 114.

I. *Of the most proper time for performing the Operation.*

It is not always in the power of a practitioner to make his election of the time of operating. He is sometimes not called in, till the most favourable opportunity has been lost, and, the situation of the parent and fetus having become extremely hazardous, no further choice remains than to perform the operation as soon as possible, after the impracticability of delivering her *per vias naturales* is determined.

Upon other occasions the accoucheur is previously acquainted with the state of his patient, and with the circumstance, which renders hysterotomy necessary ; or he obtains this information at, or soon after, the commencement of labour ; and, having speedily assembled some of his brethren in consultation upon the case, and obtained their sanction, he is enabled to make his election of the time for performing the operation.

Writers differ considerably, with respect to the most proper *time* ; but, as I do not think it necessary to adduce the opinions of each, and

to examine the reasons, they have assigned, in support of them, I shall content myself with stating my own sentiments upon this point.

As a large effusion of blood into the cavity of the *abdomen*, after the Cesarean operation, may excite dangerous symptoms, and, as the extravasated blood is chiefly *lochial*, it is a material consideration that there should be no impediment to the discharge of the *lochia per vaginam*, from the contracted state of the *os uteri*. It is, therefore, advisable, ~~if~~ the *liquor amnii* be not discharged, and the *os uteri* can be reached, to defer the operation, till this be dilated to the extent of about an inch and a half in diameter. And, when this dilatation has taken place, I am of opinion, that the operation ought to be immediately performed; lest the membranes should burst. For, when an incision of five or six inches in length is made into the uterus, previously to the discharge of the *liquor amnii*, it will be sufficient for the extraction of the fetus and secundines, and yet will constitute a much smaller *permanent* wound than one of the same extent, made into the uterus, after the discharge of the waters,† and consequently will be less

† See Baudelocque, Tome II. § 2102.

dangerous, and less likely to allow of the effusion, of the *lochia* into the abdominal cavity. And, since the strength of the patient, except where she is suffering from previous disease, and the contractile power of the uterus, will, at this period, scarcely be impaired, I have no doubt, but the proper contraction of this organ will take place, notwithstanding the suddenness of the depletion.* But, if the *liquor amnii* should be discharged at the beginning of the labour, and the *os uteri* should dilate slowly, or if no part of the uterus be within our reach, I am of opinion, that the operation should be performed as soon as possible, after the necessity of it has been established by a consultation; lest the child should die; or lest the uterus should be irreparably injured by being strongly compressed betwixt the *cranium*, or other presenting part of the fetus, and the projecting parts of the pelvis of the mother; a circumstance, which may take place in less than twenty-four hours, where the pelvis is much distorted, as is proved by the

* If the uterus should not contract sufficiently, it may be necessary to excite the necessary action by touching it with the hand, or by applying some stimulating liquid, as a little spirit of wine diluted, to the edges of the wound.

dissection of Eliz. Thompson, and by the case related by Dr. Garthshore.*

Of the proper time of performing gastrotomy I have spoken above, in page 313, &c.

II. *Of the Incision of the parietes abdominis & uterus.*

The external incision in hysterotomy has been made in various *directions*. It has, in a few instances, been made in the form of a crescent, a circle,† or a cross; but has generally been

* See above, page 210. in the note. The Dr. makes the following just observations upon this subject. "In all cases where division of the uterus is occasioned by preceding compression, and mortification, I consider the fate of the woman as determined, before that accident takes place. This may explain *how comparatively short a time* some women can bear the compression of a head or breech in the narrow pelvis to what others can, and how sudden the fate of many must be after such a rupture. This ought to lead us, if possible, to ascertain, as well as we can, in the earlier period of labour, not only the size, but the conformation of the narrow pelvis, and whether there be any sharp angles, in which case compression is always to be dreaded." Lond. Med. Jour. Vol. 8.

† Where the incision is said to have been made of a cir-

made longitudinally, obliquely, or transversely. And the sentiments of surgeons and accoucheurs are as various, respecting the *place* or *situation* of the incision, as its direction.

Of the writers, who recommend a *longitudinal*, or *perpendicular* incision, some advise us to make it in the *linea alba*; some advise us to cut through the *M. Rectus*; others prefer making it in the *linea semilunaris*; and others nearer the *os ilium*. They also differ, with regard to the height at which the incision should be begun, whether it should be begun higher, or lower, than the *umbilicus*, or of the same height as this point.

Of those accoucheurs, who have made the incision in an *oblique* direction, some have begun it higher, some lower; some have given it a greater, others a less degree of obliquity. Some have made it in the direction of the fibres of the *M. Obliquus externus*, others have made it in the contrary direction.

cular form, it is obvious that the circle could not be complete, because this must necessarily have occasioned the removal of all the parts included in the circle.

When the incision is to be made transversely, we are directed to begin it at the outer margin of the *M. Rectus*, to continue it towards the spine, and to make it higher, or lower, according to the situation of the *fundus uteri*. And, if the uterus should not be inclined laterally, the incision may be begun either at the inner margin of the *M. Rectus*, and continued towards the spine; or it may be made across the *linea alba*, and carried through a greater or less portion of both the *Recti* muscles.

If it were required to be pointed out, in what part of the abdominal *parietes* a wound, of five or six inches in extent, might be made into the cavity of the abdomen, with the greatest expectation of its healing speedily, and, consequently, with the least danger and inconvenience to the patient, I should deliver it as my opinion, that the incision should be made through the fleshy parts of the *M. Obliqui* and *Transversalis*, either transversely, or obliquely, in the direction of the fibres of the *Obliquus externus*, and sufficiently high up to avoid the *trunk* of the epigastric artery;* which, indeed, is not liable

* If, in the operation for the femoral hernia, the knife, by being carried obliquely upwards and outwards, should

to be wounded, unless the incision be carried very low down. I would avoid the *M. Recti*, the *linea alba*, and *semilunares*, because wounds of tendinous parts do not, in general, unite so well by the first intention, as wounds of muscular fibres. And I think it of some importance, that the wound should be made in the direction of the fibres of the *M. Transversalis*; because the divided edges of the *peritonæum*, which is intimately connected with this muscle, will remain in contact, or very nearly so, and, consequently, will unite most speedily, when the wound is made in a transverse direction.* And they will be

divide the epigastric artery near its origin, it might be extremely difficult to tie the artery, on account of the depth of its situation: But, if this artery, or any material branch of it, were to be wounded in the cesarean operation, no danger or difficulty would arise, for each of the divided extremities might easily be compressed betwixt the finger and thumb, till they were secured by means of the needle or tenaculum. The fear of wounding the epigastric artery, therefore, ought to have little influence, in determining the place of the incision in hysterotomy.

* “ Der quierliegende bauchmuskel, welcher bey meiner methode ganz nach der richtung seiner fasern zerschnitten worden, erlaubt nunmehr keine entfernung der wundlip-

more nearly in contact after a wound in the direction of the fibres of the *M. Obliquus externus*, than after a wound in the direction of those of the *M. Obliquus internus*; because the fibres of the *M. Transversalis* correspond more nearly with those of the former muscle than those of the latter. But, whilst I consider wounds of the abdomen, *cæteris paribus*, as more safe, when made in the above situations and directions, I do not mean to deny, that extensive wounds, penetrating into the cavity of the *abdomen*, frequently heal speedily, and without any dangerous symptoms supervening, when made in other situations and directions.

The situation and direction of the external wound are not, however, to be determined solely from the above considerations; for, since the wound of the uterus is of more consequence than that of the abdominal *parietes*, and since they must, at first, nearly correspond,* the

pen, wie es nothwendiger weise geschehen müsste, wenn man ihn, bey dem länglichten einschnitte, qneer durchschnitten hätte." &c. Lauverjat's Neue Meth. p. 202.

* As it is necessary to make the incision into the uterus through that of the abdominal *parietes*, these two incisions,

place and direction of the abdominal wound must be determined from those of the uterine wound. To determine these points, it is necessary to enquire, 1st. In what portion of the uterus a wound of the requisite length can be made, with the least danger of wounding any of its largest blood vessels? 2dly. In what direction the wound must be made, in order to favour most completely the natural discharge of the *lochia*, through the *os uteri* and *vagina*? 3dly. In what direction it must be made, to correspond best with the direction of the internal layer of the uterine fibres? and 4thly. In what part it must be made to favour most the extraction of the fetus?

when the uterus occupies exactly the middle of the abdomen, must necessarily be in the same direction: But, when the uterus is placed obliquely, the incision of the abdominal *parietes* may be transverse, and that of the uterus oblique; or the external incision may be longitudinal, and the wound of the uterus oblique; and the external incision may be oblique, whilst that of the uterus is perfectly transverse, &c. It may be properly observed here, that Baudelocque, in order to make the incision of the uterus correspond with that of the *parietes abdominis* after the operation, divided the uterus higher than the superior angle of the external wound (by cutting under the integuments), and only as low down as the middle of the external wound; and that he fixed the uterus by a bandage. See § 2112.

1: Before I proceed to point out the course and distribution of the larger blood vessels of the uterus, and the best method of avoiding them, it may be proper to define exactly the limits of the different regions of this organ. If we draw a right line from the place of insertion of one *Tuba Fallopiana* to that of the other, that part of the uterus, which is above this horizontal line, is named its *fundus*. If we draw another line, parallel to the former, across the narrowest part of the uterus, that part of this viscus, which is included between the two transverse lines, is named its *body*; and the remaining inferior portion is named its *cervix*, or neck. In the unimpregnated state of the uterus the *fundus* constitutes only a very small portion of it, not more than a ninth or tenth part: But, in the gravid uterus, at the full period of utero-gestation, the *fundus* forms from about a sixth to a fourth part of the length of the whole uterus.

The blood-vessels of the uterus are derived from the spermatic and hypogastric arteries and veins. The two hypogastric uterine arteries are, generally, considerably larger than the two spermatics; and all the arteries are much enlarged

in the gravid uterus. The spermatic arteries, after supplying the *ovaria* and *tubæ fallopianæ*, enter the uterus, on each side, near the insertion of the *tubæ*, and, having given off branches to the *fundus*, send down, on the lateral parts of the uterus, a large branch, which anastomoses with another large branch sent up, on each side, from the hypogastric arteries. From this large trunk of communication, betwixt the hypogastric and spermatic arteries, large branches are sent off across the *body* of the uterus, but neither to its *fundus*, nor *cervix*. The arterial branches of the *cervix* are derived from the hypogastrics, which enter the *uterus* at this part, on both sides. The veins of the uterus, in general, follow the course of the arteries, and, like these, form large anastomoses on each side. They appear to be more enlarged in proportion than the arteries, in the gravid uterus.

As the *placenta* is most commonly attached to the *fundus uteri*, and the branches of the arteries and veins, which run towards it, are more enlarged than any others, it may be supposed that they will bleed more freely, and, therefore, that the lower part of the body of the uterus, or its *cervix* should be divided in the cesarean ope-

ration. But, since the *fundus uteri* is supplied with its arterial and venous branches from the smaller or spermatic vessels, and, since the arteries and veins, passing to the *placenta*, are speedily diminished in their diameters by the contraction of the uterus, by making the incision into the *fundus*, even if the *placenta* should happen to be divided, the hemorrhage, upon the whole, may not be greater, and, if the *placenta* should not be divided, it may be less. When the *placenta* is so situated, that it must be divided; if the incision be made expeditiously, and the contents of the uterus speedily removed, there is scarcely any danger to be apprehended from the quantity of blood, that will be effused by the vessels, which supply it, when it is attached to the *fundus uteri*. It has happened, in a few instances, that the uterus has rolled upon its axis, and presented its posterior or lateral parts instead of the anterior surface; in which cases the trunk of one of the arteries, or one of the anastomosing trunks might be wounded, and a dangerous hemorrhage ensue, requiring the use of the needle or tenaculum for its suppression. But I do not know, that any such accident has actually occurred, and I am of opinion that it will be less likely to happen, when the incision is made in

the *fundus*, than in any other part of the uterus; more especially if it be made in a transverse direction. And, if the incision be made transversely in any part of the *body* of the uterus, it may be reasonably expected that the hemorrhage will be less, than when it is made either longitudinally or obliquely, because the principal arterial branches pass off horizontally from the great anastomosing trunks, formed by the spermatics and hypogastrics, and, consequently, fewer of them must be wounded by an incision which is parallel to them, than by one which crosses them.

2. It must be obvious to every one, that the *lochia* will be more likely to pass *per vias naturales* after hysterotomy, when the whole or the greatest part of the body and *cervix* of the uterus is entire, and capable of containing, and transmitting the discharge to the *os internum*.* Hence,

* “Der queerschnitt hingegen, wo die zwey untern drittheile verschonet bleiben, giebt eine weite höle, die fähig ist, den wochenfluss so lange aufzunehmen bis er auf dem natürlichen wege abgehet, welches die ergiessung verhindern, und den grössten theil der frauen, an denen der kayzerschnitt gemacht wird, erhalten wird.” Lauerjat's Neue Meth. p. 196. “En incisant la matrice près de son fond,

in order to favour the natural passage of the *lochia*, the wound should be made either in the *fundus*, or uppermost part of the body; and either in a transverse, or oblique direction.

3. Dr. Hunter informs us, that he has taken considerable pains to trace the arrangement of the uterine muscular fibres, but, except upon its inner surface, has observed nothing but irregularity and confusion. Speaking of the uterus of a woman, who died seven days after delivery, he says, "I stretched it gradually in warm water, and then inverted it, to have a full view of its internal surface."—"In the body of the uterus the fibres were very regularly circular. The fundus was made up of two concentric circular plains of fibres, at the very centre of which was the orifice of the Fallopian tube." And he adds, "When this internal stratum was removed, the fasciculated appearance, and regular direction of the fibres were less and less apparent, in proportion as I dissected outwards."* From this view of the

la partie inférieure de sa cavité restant entière, pourroit servir de premier réceptacle à ces fluides, à mesure qu'ils distillent des vaisseaux intérieurs; de sorte qu'ils s'échapperoient plus aisément par le col." Baudelocque § 2114.

* Anatomical Description &c. p. 27. &c.

disposition of the internal layer of the muscular fibres of the uterus, it is evident, that a transverse incision will more nearly correspond with the direction of these fibres, than either a longitudinal or an oblique one, especially when it is made in the lower part of the *fundus*, or in the body of the uterus: And, it has been found, by actual experiment, that the lips of a transverse wound remain more nearly in contact,*

* “Verhindert der queerschnitt die erste und folgende erweiterung der lippen der wunde, welche bey den schnitt der länge nach nothwendig erfolgt. Denn während der schwangerchaft, dehnt sich die gebärmutter mehr nach der höhe als nach der breite aus; eben so ist nach der geburt das zusammenziehen ihrer theile in den nehmlichen verhältniss, wie ihre entfernung; der obere zeigt sich mehr nach den untern als die seitentheile einer gegen den andern, woraus nothwendiger weise eine mehrere annäherung der lippen der wunde beym queerschnitt folgt, hingegen bey dem der länge nach nähern sich mehr die winkel der wunde, und daher die entfernung ihrer ränder.” Lauverjat's Neue Meth. p. 198. This author, in support of the above opinion, informs us, that he performed the cesarean operation four times on dead or dying women, in the year 1781, and having made the incision in a longitudinal direction, the wound was oviform, and remained open in every instance. The same circumstance happened in two living women, upon whom he performed the operation in the same manner; and in the last woman, upon whom Deleurye operated, the

and, therefore, are likely both to heal more speedily, and to resist more the effusion of the *lochia* into the cavity of the *abdomen*.*.

4. As hysterotomy is principally rendered necessary by extreme deformity of the pelvis, and as the *fundus uteri* is, in this case, very prominent, an incision in this part is most easily made, and most favourable to the extraction of the fetus and secundines.

From this inquiry it appears, that the incision

wound of the uterus was oval, and its lips two inches and nine lines asunder. In April 1782, Lauverjat performed the cesarean operation upon a woman, who died of convulsions in the ninth month of her pregnancy. He made the incision in a transverse direction, and, immediately after the child and *placenta* were extracted, the lips of the wound in the uterus gradually approached, and at length came into perfect contact.

* "Es ist daher ohnstreitig, dass bey dem länglichten einschnitt in die gebärmutter die lippen der wunde sich allemal von einander entfernen, niemals aber bey dem queerschnitt; die andere ursache warum man, wenn man meinen vorschlag befolget, die ergiessung in den unterleib vermeidet." Ibid p. 199.

of the uterus ought to be made in its *fundus*, or the highest portion of its body; and, that it ought to be made in a transverse, or slightly oblique direction, rather than longitudinally. Let us, in the next place, examine how far the result of this inquiry is corroborated by experience. As in many of the cases of hysterotomy, which I have collected, there is no account of the situation or direction of the wound, I am under the necessity of taking the smaller collection, made by Baudelocque: Of which cases “*thirty-five* appear to have been made on the side of the abdomen, and *eighteen* of these with success; thirty in the course of the *linea alba*, ten successfully; and *eight* in the manner recommended by Lauverjat (that is, we believe, by a transverse incision above the navel), *three* of which succeeded.”* From this account it appears; 1st. that

* Med. and Chir. Review for Sept. 1799. It may be proper to observe here, that Lauverjat directs the incision to be made transversely in the side, between the *M. Rectus* and the spine, more or less under the third false rib; not *above* the navel indiscriminately. For he says, that the *place* of the incision is to be determined from the situation of the *fundus uteri*. If this be high, the incision must be high; if it be inclined to the right side, the incision must be on the right side, &c. “Der unterleibs- oder eigentliche kay-

the *linea alba* is the most unfavourable place for the external incision, in the Cesarean Operation, only one in three having survived it, when it has

erschnitt, welcher, so bald die geburt durch den natürlichen weg nicht geschehen kann, nöthig ist, bestehet darinnen, dass man einen fünf zoll langen queerschnitt, zwischen dem rechten bauchmuskel und dem ruckgrat, mehr oder weniger unter der dritten falschen ribbe, nachdem der gebärmuttergrund mehr oder weniger erhöht, in die bedeckungen des unterleibes macht, worunter sich die gebärmutter befindet."

—"Der ort des einschnitts, wie man aus dem jetzt gesagten urtheilen kann, wird nicht durch die wahl des wundarztes, wie man bis jetzt geglaubt und vorgetragen hat, bestimmt. Er hängt hier von der lage der gebärmutter ab. Liegt diese zur rechten, so muss man hier operiren, und so umgekehrt. Ist der gebärmuttergrund hoch oben, so muss es der schnitt ebenfalls seyn." Neue Meth. p. 191 & 192. He also observes, that it had been four times performed by making the incision transversely, and always with success, namely, once by Sanson, once by M. Lebas, and twice by a surgeon at Attichi, before he adopted this mode. And he relates four cases, in which he has performed hysterotomy himself. In two of these he made the incision in the *linea alba*, unsuccessfully; and in the other two the incision was made in a transverse direction, and both the women were preserved. Since the publication of his Nouvelle Methode de pratiquer l'Opération Césarienne in 1788, it appears from the Analytical Review (for September and October 1789), that M. Lauverjat has given a new case, in proof of the advantages of his method of practising the Cesarean Operation, to the

been thus performed. 2dly that a greater proportion of women has recovered, upon whom the operation has been performed in the manner, recommended by Lauverjat; and, 3dly. that a still greater proportion of women (more than one half) has survived the cesarean operation, when practised in the side.

In the Review, which I have quoted, it is not stated in what direction the incision was made when the operation was performed in the side: Nor is it mentioned, whether these patients were in a state, more favourable to the operation than in the other cases; circumstances, which ought to be known, before we can determine accurately, to which mode of performing the operation of hysterotomy the preference is due from actual experiments: And, unfortunately, I cannot supply this defect, as I have not yet had an opportunity of consulting the original memoir.

From Lauverjat's account of the success,

Royal Academy of Surgery at Paris. But I have not been able to find any further account of this third case, and, therefore, I have omitted to enter it in my Table of Successful Cesarean Births.

which has attended the transverse incision, it appears that a greater number of women has been preserved by it than is stated in the above account, given by the reviewers, from Baudelocque's Memoir; and I shall here observe, that I am induced to give the preference to a transverse or slightly oblique incision, continued through the integuments and fleshy parts of the abdominal muscles into the *fundus*, or upper portion of the body of the uterus, not only for the reasons already assigned, but because there is less danger of wounding the intestines and bladder (more especially when the latter cannot be emptied by the catheter*); and because extensive ventral *herniæ* are not so liable to take place, when the operation is performed in this manner, as when the external incision is made in

* When the patient has not made water for some time, the catheter should be passed previously to the operation; otherwise there will be great danger of wounding the bladder, if the incision be made in the *linea alba*; and even, notwithstanding this precaution, the bladder has been found so much elevated as to conceal the greater part of the uterus. "Le bas-fond de la vessie, dans ce cas, étoit presque à la hauteur de l'ombilic, & la vessie même, quoiqu' on ait eu le soin d'én évacuer les urines, se présentoit dans toute l'étendue de l'incision des enveloppes du bas ventre." Baudelocque § 2115.

the *linea alba*. I am likewise of opinion, that the wound should be made with a very sharp knife, because wounds, that are made with blunt instruments, do not heal so expeditiously; and that the incision of the uterus should be made very quickly, lest a violent contraction of this organ should take place, before it is completed, and produce a laceration. Those, who have suggested, that the uterus ought to be divided by a blunt instrument, seem to forget that the hemorrhage, during the operation, is rarely if ever so profuse as to be dangerous; and that the extravasated blood, found, on dissection, in the cavity of the *abdomen*, is principally *lochial*.

III. *Of the treatment of the wounds of the Uterus, and parietes abdominis.*

1. After extracting the fetus and secundines, it is necessary to clear the uterus of coagulated blood;* and the next circumstance to be deter-

* We are advised by Baudelocque (§ 2124,) to pass a finger through the *cervix uteri*, in order to push into the *vagina* any clots of blood, that may be collected there. This practice will be still more necessary, when any portion of the membranes is left behind in the uterus, and may be supposed likely to prevent the proper discharge of the *lochia*.

mined is, in what manner the wound of the *uterus* is to be treated. Is the union of its lips to be left entirely to nature? or, Is the wound to be closed by a suture? Most surgeons recommend the former method; and it is to be feared, that the use of the needle would add to the danger. But the wound of the uterus has very rarely been stitched; and, therefore, it has not been determined by experience, to which of these methods the preference is due. The needle has, however, been used with success in one case at least (See Table 1st. C. 76); and those surgeons, who are more apprehensive of inflammation's being excited by the effusion of fluids into the abdominal cavity, than by stitching the *uterus*, may be inclined to prefer the latter mode of treating the incision of this organ.* When it is determined to use the needle, the Glover's Suture should be employed, and the higher end of the ligature should be left hanging out of the external wound, for the convenience of withdrawing it, as soon as it is become loose.

* It may likewise be urged in favour of stitching the wound of the uterus, that it will prevent the omentum and intestines from being incarcerated in the incision; but this is so rare an occurrence, that the prevention of it will not be considered as of much importance.

2. Respecting the best mode of treating the wound of the *abdominal parietes*, there is a great diversity of opinion. Some writers prohibit the use of sutures entirely. Lauverjat thinks that the position of the patient, with her body bent forwards,* is fully sufficient for promoting the union of the lips of the wound, when it is made in a transverse direction. He disapproves of the use of the uniting bandage, and says, that adhesive plaisters are useless, and gastroraphy dangerous.† Yet, from his own account of the case of M. Joseph, it appears that the *omentum* and intestines protruded at the wound,‡ and that

* Die fast natürliche lage, ich will sagen, wo der kopf gegen den rumpf geneigt, und die schenkel gebogen sind, erleichtert die vereinigung der ränder der wunde, und macht alle andere mittel unnöthig." p. 200.—"Und noch mehr gefährlichere folgen werden durch die vereinigende binde hervorgebracht, &c." p. 203.

† "Die heftpflaster sind unnütz, und die bauchnath gefährlich." p. 204.

‡ Den folgenden tag zeigte sich eine kleine portion netz in der wunde, wir glaubten, dass daraus eben nicht viel zu machen. Den darauf folgenden hatte sich ein stück darm dazu gesellt. Diese theile wurden sogleich zurück gebracht, und zeigten sich durch die ganze kur hindurch nicht wieder. Ib. p. 208.

the uterus appeared, after they were replaced, filled up the wound, and became united with the integuments, but withdrew after seven months. The margins of the wound then approached, and grew together.* Other writers on the Cesarean operation recommend Gastroraphy, and with very great reason; for, if the external wound be left unstitched, even though it be secured by strips of adhesive plaister and a bandage, it is very apt to be forced open, when the patient vomits, coughs, sneezes, or even changes her position; and the intestines, *omentum*, or *uterus*, are frequently protruded; by which means the external wound is prevented from healing by the first intention, the cavity is more exposed, and

* "Die Gebärmutter füllte beständig die wunde aus, und vertrat hier die stelle eines pfropfs. Es erzeugte sich eine art von oberhaut, welche die gebärmutter von den bedeckungen schwer unterscheiden liess. Ganzer sechs und einen halben monat blieben die sachen in diesem zustande, und mehrere wundärzte haben sie ebenfalls gesehen. Den siebenten monat verschwand die gebärmutter, die ränder der bauchwunde näherten sich, und verwuchsen: und die narbe, welche der queere war, ist jezt ein wenig schief. Ich will die ursachen dieser erscheinungen zu erklären nicht unternehmen, sondern begnüge mich die erstaunungswürdigen wirkungen der natur zu bewundern." Ibid. p. 212.

the prolapsed *viscera* are injured, become inflamed and gangrenous, and occasion her death.

It has been recommended by some accoucheurs, who are advocates for the use of the needle and ligature, that only a few stitches be made, and the lower part of the wound kept open by a tent, in order to favour the egress of blood or any fluid, that may be effused into the cavity of the *abdomen*: But, since the wound of the uterus, on account of the necessary contraction of this organ, rarely corresponds with the external wound, after the operation, and since adhesions of the *viscera* to the divided edges of the *peritonæum* frequently take place, it will scarcely be possible, by this practice, to effect a complete evacuation of the extravasated fluid, or to prevent it from being diffused through a considerable part of the abdominal cavity. And, since it has also happened, in several instances, where the external wound has had but few stitches, that a portion of intestine or *omentum* has insinuated itself between the ligatures, and become incarcerated; and that irreparable mischief has been done, before the discovery of the accident; I am of opinion that the abdominal wound should be accurately closed, by the interrupted, quilled,

or glover's suture, from one extremity to the other, the peritonæum being studiously avoided by the needle. By this practice, the union of the wound by the first intention will be promoted as much as possible, and the danger, arising from an incomplete state of the cavity, and from a protrusion of the abdominal *viscera*, will be effectually obviated; circumstances, which I consider of much more importance, than any attempt to provide a passage for the effused blood or other fluids, by keeping the lower angle of the external wound open. For it is observed that, in a wound of any shut sac, if the parts, being placed naturally together, should once adhere, they become well and sound in the very moment in which they unite; and, if the wound be broad and open, or if the least thing keep its lips apart from each other, it inflames, and not the wound only, but also the wounded cavity frequently inflames.* But, if a few ounces of blood should be effused into the *abdomen*, they form a thin coagulum, which covering the wound of the uterus, and extending to a greater or less distance round it, is not likely to stimulate much by its bulk. This coagulated blood may,

* See Bell's Discourses.

in part, become vascular, and unite the uterus and other *viscera* with the *peritonæum*; or it may be wholly removed by the absorbents, before it has done any material injury, either by its bulk or acrimony; or, adhesive inflammation taking place round its edges, it may be cut off from the general cavity of the abdomen, and be evacuated either by ulceration or an incision. It is well known, that extravasated blood is thus disposed of after injuries in other parts of the body, without producing much inconvenience or danger. The blood, effused into the *abdomen*, when a rupture of the uterus takes place, and, the the fetus being extracted *per vias naturales*, the patient survives the delivery, must become organized, or be taken up by the absorbents; except that a part of it may, perhaps, pass through the wound of the uterus, and be discharged by the *vagina*. And I have no doubt, but as much blood is occasionally effused into the cavity of the *abdomen*, in consequence of blows or falls, as after the operation of hysterotomy, without exciting inflammation, or any dangerous symptoms.* It is also evinced, from the operation

* The quantity of extravasated blood, found on dissection in the *abdomen*, after a violent contusion, has sometimes been so great, as to prove fatal in itself.

of *paracentesis*, that several gallons of a *bloody serosity* may be contained in the abdomen, without exciting any inflammatory symptoms. When, therefore, a few ounces of a fluid of this kind are effused into the abdominal cavity after the cesarean operation, it does not follow that inflammation of the *peritonæum* will necessarily be produced by it, if it should be denied an exit through the external wound. It may be absorbed, before it has acquired a dangerous degree of acrimony. And, if the effused fluid should not be taken up by the absorbents, it may be evacuated by opening the lower angle of the wound, or by making a puncture or incision in some other part of the abdominal *parietes*, when it is collected in such quantity, that any advantage is likely to be derived from this practice.

After sewing the external wound, the lips should be further supported in perfect contact, by strips of adhesive plaister; a moderate compression should be made by a flannel bandage; and the body should be bent a little forwards, to make the *pelvis* and *thorax* approximate as much as can be done, without rendering the position of the patient irksome to her. In two

or three days the ligatures may be removed; and, if the lips of the wound have united by the first intention throughout their whole length, the application of the strips of adhesive plaister should be continued till the wound is completely healed, and, if it appear necessary, a little *unguentum ceræ*, spread upon lint, may be first applied to the sore. But, when union by the first intention does not take place, which is more likely to be the case, when the constitution of the patient is bad, and when blood or a serous fluid is effused into the abdominal cavity, in larger quantity than usual, more attention to the wound will be necessary. The dressings must be adapted to the nature of the sore, and be repeated more or less frequently according to the quantity of the discharge; and particular care must be taken to prevent the *viscera* from protruding, and to replace them as soon as possible, whenever this happens. It has been recommended to throw injections of various kinds into the *abdomen*; but, from the effects of wine and water injected into the cavity of the *tunica vaginalis testis*, it is clear that any stimulant injection, thrown into the abdomen, may excite a dangerous inflammation of the cavity; and it is by no means evident, that any material advan-

tage would be gained from using injections of a milder kind. It is probable that, in those cases, where injections have appeared to be of service, an adhesion had previously taken place between the divided edges of the *peritonæum*, and the *viscera* lying in contact with them, which prevented the application of the liquid to the general cavity of the *abdomen*.

IV. *Of the Sources of Danger.*

In those cases, wherein hysterotomy has been performed, the sources of danger are to be sought for, 1st. in the *state of the patient*, at the time of her submitting to the operation; 2dly. in the *nature of the wounds* of the abdominal and uterine *parietes*.

1. When we compare the number of successful cases of hysterotomy with the unsuccessful ones, that are recorded previously to the year 1750, and subsequently to this period, the proportion of successful cases appears to be much greater in the former period. This may have arisen from different causes; for, in the earlier period, many of the unsuccessful cases may not have been recorded, whilst the histories of the successful

ones were carefully preserved; or some of the successful cases, that have been published, may be fictitious, or spurious; or the success of the earlier operators may have actually been greater than at the present time. Whether many unsuccessful cases were formerly kept back, I cannot pretend to say, but I do not think this very probable; because there has always been a strong opposition to the operation, and those surgeons, who were adverse to it, would, I think, have taken care, that the public was made acquainted with the unsuccessful termination of all the operations, which had come to their knowledge. How many of the successful cases, that are recorded by the earlier writers, are fictitious or spurious, I have no means of determining. They were believed, I should presume, to be authentic and true cases of hysterotomy by those, who have related them, and who, from living at or near the time, when these cases occurred, had better opportunities of judging than any modern author can possibly have. That the success of the earlier operators was actually greater than at the present day, is, in my opinion, very probable; because they not uncommonly performed it upon women, whose pelves were well formed, or so little contracted, that they were capable of being

safely delivered *per vias naturales*; and I am persuaded, that the *healthy state* of the woman, at the time of her undergoing the operation of hysterotomy, is of more importance towards her recovery than the *mode of performing the operation*. Upon this ground only, can the greater proportion of unsuccessful cases, in this country than on the continent, be explained satisfactorily. To talk of the influence of climate is absurd. Have not Cesarean operations been performed with success in different latitudes, from the most southern provinces of Europe to nearly the most northern? And can it be supposed, that the climate of Great Britain is more unfavourable to this surgical operation than any part of that extensive tract of country, when it is found to be equally as favourable to other capital operations? Will it be contended, that Holland can boast a better atmosphere than England? Surely not. The cause of the greater number of deaths after hysterotomy, in this kingdom, is to be looked for in the diseased state of the patients, previously to labour in some of the cases, and in the injuries received, or diseases produced, during a long protracted labour, in other cases. "If," says Dr. Denman, "we had the liberty of selecting a patient, on whom to try the merits of this ope-

ones were carefully preserved; or some of the successful cases, that have been published, may be fictitious, or spurious; or the success of the earlier operators may have actually been greater than at the present time. Whether many unsuccessful cases were formerly kept back, I cannot pretend to say, but I do not think this very probable; because there has always been a strong opposition to the operation, and those surgeons, who were adverse to it, would, I think, have taken care, that the public was made acquainted with the unsuccessful termination of all the operations, which had come to their knowledge. How many of the successful cases, that are recorded by the earlier writers, are fictitious or spurious, I have no means of determining. They were believed, I should presume, to be authentic and true cases of hysterotomy by those, who have related them, and who, from living at or near the time, when these cases occurred, had better opportunities of judging than any modern author can possibly have. That the success of the earlier operators was actually greater than at the present day, is, in my opinion, very probable; because they not uncommonly performed it upon women, whose pelves were well formed, or so little contracted, that they were capable of being

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ration, we certainly should not choose one, who was either very much distorted, or who had the *mollities ossium*, or who had been several days in labour; because the event must very much depend upon her state at the time, when the operation was performed.* Yet such has actually been the state, I believe, of every woman, upon whom the Cesarean section has been performed in this kingdom. When a woman is nearly exhausted by the long continuance of labour, and is suffering, at the same time, from inflammation of the abdominal, or pelvic *viscera*; or has suffered such a degree of contusion of some of these *viscera*, as has deadened the part, or must excite a violent inflammation; her recovery must be very precarious, or even impossible, if her labour could be terminated, without adding to her danger by any operation. When a woman is extremely debilitated by an incurable disease, as *malacosteon*, and the abdominal and pelvic *viscera* have also suffered, during several months, an injurious degree of compression, in consequence of the diminution of the abdominal cavity, and the unnatural position of the uterus, Who would expect such a patient to recover from a

* Introd. to Midw. Vol. II. p. 244.

Cesarean operation? Or, rather, Who has known such a patient survive any capital operation? * Where the deformity of the pelvis arises from Ricketts, and is unaccompanied by any mortal injury or disease, the prognosis may be more

* "When a wound" says Mr. Hunter "is made in a person of a weak habit, there is great backwardness in the two cut surfaces to unite by the first intention, therefore inflammation takes place, if there be strength of constitution to produce it, which is not always the case; so that in such habits inflammation is more likely to be a consequence; but this does not arise from a greater readiness to inflammation in the habit, but from a want of power and disposition to heal, which renders inflammation necessary; however, in this case the want of powers or disposition to unite may partly depend upon a different principle from that of weak parts or solids; it is probable that the blood of people of weak habits is weak in its living principle, which it therefore very soon loses upon extravasation, so as to become unfit for a bond of union, by which it degenerates into an extraneous body, and therefore the suppurative inflammation must take place if there be strength to produce it." *Treatise on the Blood, &c.* p. 233. "I have seen several cases, where the power has been so weak, that the wound, after tapping, has not united by the first intention, nor has even acquired the adhesive state of inflammation, and has admitted water to pass through it from the abdomen for several weeks, without the peritoneal inflammation being excited." *Ibid.* p. 232.

favourable, because, in this case, the system has been able to overcome the disease, which produced the distortion. We may also expect a more favourable event, when the deformity, as in the case of Mr. Barlow's patient, is the effect of an external injury, from which the patient has completely recovered; and when the contraction of the pelvis is occasioned by an *exostosis*, provided the system be unaffected.

2. The sources of danger, arising *from the operation of hysterotomy*, when performed upon a patient under favourable circumstances, or upon one, who is suffering from previous disease or injury, are : a) Violence done to the constitution. b) Hemorrhage. c) Locked Jaw, or Convulsions. d) Inflammation and its consequences, Gangrene and Suppuration.

a.) The violence, offered to the constitution by blows or wounds, and by other capital operations, namely, Lithotomy, Amputation, &c. as well as by Hysterotomy, has, upon some occasions, been so great, that all the functions have been disordered, and symptoms of excessive irritation, viz. depression of strength, restlessness, vomiting, a small and frequent pulse, dyspnœa, & delirium,

have immediately supervened, and destroyed the patient within less than twenty-four hours, independently of any considerable hemorrhage, convulsions, inflammation, or gangrene of the wounded parts. I do not recollect to have read, or heard of any patient's dying during the operation of hysterotomy, or immediately after it. Nevertheless, when a patient, who has neither been endangered by pre-existing disease, nor by debility produced, or injury sustained in the course of her labour, dies in the way above mentioned, I think her death may be fairly imputed solely to the shock, which the system has received from the operation: But, when the patient has laboured under some incurable disease, or has been previously much exhausted, or has sustained some considerable local injury during her labour, if she should die, in the manner, and within the period mentioned above, I am of opinion, that her death should not be ascribed solely to the violence, done by the operation, but to this, and the state, to which she was previously reduced, taken conjointly. It is to these causes combined, that almost every fatal case of hysterotomy, which has occurred in Great Britain, is to be ascribed.

b.) The Hemorrhage, occurring after an accident, or operation, may prove fatal in different ways. 1. It may be so excessive, as to induce *syncope* and death. But it does not appear, that the hemorrhage, arising from the wound of the uterus in hysterotomy, has ever proved fatal in this way. 2. It may be destructive, when the effused blood is in comparatively small quantity, by producing a compression of some vital organ, as the *encephalon*, when extravasation takes place within the *cranium*. Since, however, the cavity of the *abdomen* is easily dilatable, it cannot be expected, that a small effusion of blood, made within it, will kill simply by inducing compression, and thus impeding the functions of the *viscera*. 3. Hemorrhage may prove indirectly fatal, by inducing inflammation, in consequence of the pressure, or acrimony of the effused blood. But this effect will fall more properly under consideration hereafter.

c.) Spasmodic or convulsive affections have not uncommonly supervened to accidental injuries, and chirurgical operations, and have proved mortal; but, as I am unacquainted with any case, in which hysterotomy has proved mortal, by the intervention of such complaints, I do not think

it necessary to notice this source of danger any further in this place, although I admit the possibility of the occurrence.

d.) I have shewn already, that inflammation of the intestines and *uterus* has not uncommonly taken place, previously to the operation of hysterotomy: But the inflammation, which I am now to consider, is occasioned by the operation, and arises immediately from the wound, or from the exposure of the abdominal cavity, or from the bulk and acrimony of the effused fluids, taken singly or combined.

That the stimulus, occasioned by a large wound penetrating into the cavity of the abdomen (or any large circumscribed cavity), may induce a dangerous degree of inflammation, independently of effused fluids, will, I should suppose, be generally admitted by professional men. But they are by no means agreed, respecting the share, that the wound, and the admission of air have in producing the mischief, in these cases.

By some writers, the admission of air into the cavity of the *abdomen* is regarded as the principal cause of the inflammation and danger, attending

the cesarean operation. Hence the following question has been proposed by the late Dr. Aitken, concerning hysterotomy, "Would performing it, while the parts are immersed in tepid water by secluding the air, tend to diminish its fatal effects?"* And Dr. Haighton believes, he has determined by experiments, that no advantage is to be gained from this practice. He opened the *abdomen* of different animals to a considerable extent, closing them again during the immersion, and applying to the cut edges of the abdominal wound, as soon as it was raised above the water, an adhesive composition, by which and a bandage the external air was excluded. "No symptom indicating internal inflammation supervened, and perfect health was soon restored. On the lapse of some weeks, these animals were subjected to anatomical examination, which shewed that an *adhesion of the omentum* to the cut edges of the *peritonæum* had made that cavity complete."† He afterwards repeated these experiments in air, all other circumstances being similar, and the event of them agreed precisely with the former.

* Principles of Midwifery p. 82.

† Medical Records, &c. p. 274.

By one ingenious writer * it is doubted, whether any air is admitted into the abdominal cavity, when a penetrating wound is made into it ; but, I think, no one, who has seen the operation of hysterotomy performed, will deny that air is both freely applied to the exposed *viscera*, and actually admitted into the cavity of the abdomen.

By other writers it is asserted, that the air is perfectly harmless. Mr. J. Hunter, speaking of the application of air to internal surfaces, says it "has generally been assigned as a cause of this inflammation, but air certainly has not the least effect upon those parts, for a stimulus would arise from the wound, were it even contained in a vacuum."—"Further in many cases of the emphysema, where the air is diffused over the whole body, and this air not the purest, we have no such effect, excepting there is produced an exposure or imperfection of some internal surface for this air to make its escape by, and then this part inflames. Nay, as a stronger proof, and of the same kind with the former, that it is not the admission of air, which makes parts fall into inflammation, we find that the cells in the

* See Mr. J. Bell's Discourses &c.

soft parts of birds, and many of the cells and canals of the bones of the same tribe of animals, which communicate with the lungs, and at all times have more or less air in them, never inflame; but if these cells are exposed in an unnatural way by being wounded, &c., then the stimulus of imperfection is given, and the cells inflame, and unite, if allowed; but if prevented, they then suppurate, granulate, &c.* And Dr. Haighton, very properly considering all those experiments as liable to objection, in which the admission of air is complicated with a penetrating wound, says, "This induced me to devise a mode of inquiry not encumbered with this difficulty; and, recollecting that in many brutes the cavities of the abdomen and tunica vaginalis testis communicate with each other during life (a circumstance, which, with a few exceptions, in the human subject is confined to early infancy), I took the advantage of this anatomical fact, and from a small puncture made at the bottom of the scrotum, penetrating the tunica vaginalis, several cubic inches of atmospherical air were conveyed by a syringe into the peritoneal cavity of a dog. From *different trials* that were

* Treatise on the Blood &c. p. 373 &c.

made in this manner, I do not hesitate to conclude that atmospherical air, penetrating into cavities, is perfectly harmless, and has no influence over the consequences of the Cæsarian operation.* It is to be wished that the *number* of his experiments had been specified, and that the *appearances on dissection* had been stated. For, unless those experiments were very nume-

* Medical Records & Researches p. 276 &c.

Mr. J. Bell is also of the same opinion, he says "the operation of Cesarean Section is fatal not from any loss of blood, for there is little bleeding; nor from the abdomen being exposed to the air, for they also die, in whom the womb bursts, and where the air is not allowed to enter; but merely from that inflammation, which succeeds to wounds of the peritonæum small as well as great, of which we have sometimes a melancholy proof in the operation of Hernia, in which the stitching of the wound according to the whimsical improvement of some modern surgeons, and where the mere tying of the sac, as in the practice of old rupture doctors and castrators, often raised such inflammation as spread very quickly over the *abdomen*, and ended in gangrene." Discourses p. 57. To these observations it may be objected, that a ruptured uterus very frequently destroys the patient, independently of inflammation; that air is freely applied to the prolapsed *viscus*, in the operation for the hernia; and that air is not wholly excluded from passing into the abdomen, in cases of ruptured uterus.

rous, it may still remain doubtful whether the introduction of air into the abdominal cavity be perfectly harmless (although it must be acknowledged that its effects have been greatly over-rated); since it is well known, that the remote causes of diseases frequently fail of producing their effect, from the body not being predisposed to receive the disease;* and it is also ascertained, that adhesive inflammation is not always accompanied by pain, or constitutional affection. The circumstance of the adhesion of the *omentum* to the cut edges of the wound, in Dr. Haighton's former experiments, may be considered by some as a further reason for believing, that inflammation was excited in the *omentum*, in those cases, by the application of air, and water to it. And the same may be inferred, perhaps, by some practitioners, from the appearances on the dissection of a woman, who died after the cesarean operation.—“After death it was found, that the intestines were united to the *peritoneum* all round the wound for about half an inch in breadth, and the surface of the intestines which lay unattached

* “Deinde non sequitur ut, quod alium non adficit, aut eundem aliis, id ne alteri quidem, aut eidem tempore alio noceat.”—“Potest autem id, dum solum est, non movere, quod junctum aliis maxime movet.” Celsus in Præf.

and exposed at the bottom of the wound, were inflamed, while every other viscus, as well as the peritoneum, beyond the adhesions, were free from inflammation."* Mr. J. Hunter, however, is of opinion that it is not necessary, that two surfaces, which are to be united, should *both* be in a state of inflammation, he says "it appears only necessary that one should be in such a state, which is to furnish the materials, viz. to throw out the coagulating lymph, and the opposite uninflamed surface accepts simply of the union; nor is it even necessary that either surface should be in a state of inflammation, to admit of union; for I just observed, that extravasated blood produces an union without inflammation; and we often find adhesions of parts, which can hardly be inflamed."† If this doctrine be admitted, we can conceive that the adhesion of the *omentum* to the *peritonæum* might take place, without any inflammation's being excited upon the surface of the former part; and that the inflammation of the surface of the intestines, which lay exposed at the bottom of the wound, in the case mentioned by Mr. Hunter, was communicated to it from the edges of the *peritonæum*, after

* Hunter's Treatise on the Blood &c. p. 247.

† Ibid. p. 253.

this membrane became united with the intestines. Other arguments against the opinion, that the introduction of air into circumscribed cavities is perfectly harmless, may be adduced from the temperature of the atmosphere, and the chemical qualities of the oxygen gas, contained in it; from the difference of structure &c. in the membranes, lining circumscribed cavities and canals; from the great advantage, derived from healing penetrating wounds speedily, and by the first intention; and from the disposition of lacerated capsular ligaments to inflame being much greater in cases of compound, than of simple luxation.

Although I have been induced to bring forward these objections to the opinions of Mr. Hunter and Dr. Haighton, I am decidedly of opinion, that the mere admission of air into the abdominal cavity is not attended with any considerable danger. Indeed, it is clear, from the experiments and observations of these gentlemen, that a simple penetrating wound of the *abdomen* (though it be extensive,) and the application of air and water to it, taken collectively, if the constitution be good, and the wound be properly treated, seldom excite a dangerous inflammation

of the cavity; for, if an inflammation of the divided edges of the *peritonæum* do arise, it is generally prevented from extending to any material distance, by an adhesion taking place between them and the *viscus*, or part, which is opposite to, and lies in contact with them. But a penetrating wound of the *abdomen*, complicated with a wound of some large blood vessel, or of any of the *viscera*, is more dangerous. If the wounded *viscus* contain any foreign, acrid, or excrementitious matter, as the stomach, intestines, gall or urinary bladder, the contents of this *viscus*, being effused into the cavity of the *abdomen*, may excite an extensive and violent inflammation of the *peritonæum*. The blood, effused into the *abdomen* from the cavity, or divided edges of the uterus after hysterotomy, though affording a less degree of stimulus than bile, urine, or *fæces*, may sometimes become a source of danger; because when it neither becomes vascular, nor is absorbed, it may be rendered acrimonious, and induce a more or less extensive inflammation of the *peritonæum*, independently of the stimulus, arising from the wounds. This will the more easily be effected, because the *peritonæum* of puerperal women is peculiarly susceptible of inflammation. It is scarcely necessary to observe, that

a general inflammation of the cavity of the *abdomen*, from whatever cause it may originate, is an extremely dangerous disease, and that, unless it be speedily relieved, extravasations of serum and coagulating lymph, suppuration, or gangrene frequently take place, and terminate fatally.

An accurate account of the appearances on dissection, in the *abdomen* of women, who have survived the operation of hysterotomy, might suggest some further improvements in the mode of performing it, and in the treatment of the wounds. And it is greatly to be regretted, that we are unacquainted with the state of the abdominal cavity in most of these women. I have only met with the appearances on dissection, after one successful case, viz. that of — Schulers, related in my *Defence of the Cesarean Operation* (p. 82 & seq.), the *Sequel* of which I shall now bring forward. “ During the spring of the year 1780 the patient continued in perfect health, and engaged in the most labourious occupations, without experiencing any inconvenience from the operation. In the month of August of that year she became again pregnant, and, during the first four months of her pregnancy, experienced no other symptoms than those peculiar

to women in general in that state. But, at the end of that period, the cicatrix of the lacerated wound began to grow thinner than the rest of the integuments, and to protrude more and more, so that in the month of February, 1781, the cicatrix was become extremely thin, and the projection of the abdomen at that part, towards the right side, was very considerable. The abdomen was supported with all possible care by means of bandages, passed round the pendulous belly, and over the shoulders till the 28th. of April, when the patient was delivered, after a very easy labour, of a dead child. She was immediately put to bed with the placenta still in utero. In this state she was found by our author" (Dr. F. A. Fritse) "six hours after the delivery of the child. She complained hardly of any pain, and the lochia flowed very sparingly; but her thirst was excessive, and the powers of life were greatly reduced; she had a quick succession of fainting fits, and died in less than an hour after his arrival."

"The following were the appearances, that occurred on examining the body after death. The abdomen was observed to be considerably dis-

tended. The cicatrix of the wound made by the Cæsarean operation was found to be perfectly firm; while, on the other hand, that of the lacerated wound was extremely thin and distended. Upon opening the cavity of the abdomen there were found in it twelve pounds of extravasated blood, partly in a fluid, and partly in a coagulated state. The peritonæum adhered firmly to both the cicatrices, and the omentum was also found to have contracted some adhesions to the peritonæum at those places. On the right side of the abdomen, anteriorly, a portion of the intestinum cæcum was found adhering pretty firmly to that part of the peritonæum, which is reflected over the uterus. The veins of the uterus, and particularly of the right ovary, were so much enlarged, that the natural figure of the latter could with difficulty be distinguished. A coagulum of blood, lodged between the right ovary and the right lateral portion of the fundus and body of the uterus, had distended the peritonæum reflected over those parts so as to form a sac with an aperture, through which the blood had made its way into the cavity of the abdomen. Upon carefully cleansing this sac of its contents, it was found that several of the enlarged veins of the substance of the uterus



opened into it. The place, where the incision had been formerly made in the substance of the uterus by the Cæsarean operation, was so perfectly cicatrised, that it could hardly, with certainty be distinguished; and the portion of the uterus, through which the horn had penetrated, and where there had been a loss of substance, was likewise so completely healed that nothing but the thinness of the uterus at that part served to point it out. The placenta was still so firmly adherent to the uterus, that it required much pains to separate it without injury to the latter. After the removal of the placenta, the uterus was taken out and dried, and then filled with water, not a drop of which made its escape. All the other abdominal viscera were in a natural state. That the effusion of blood into the cavity of the abdomen was the immediate cause of the patient's death is very evident, the author thinks, from the dissection; but how far the accident in the year 1779, or the subsequent Cæsarean section, might operate as an occasional cause, he leaves to the experienced reader to determine."*

Where the external wound is not sewed after

* London Medical Journal, Vol. 11th.

this operation, an opportunity has sometimes been afforded of ascertaining, that the *omentum*, intestines, or *uterus*, have become united with the divided edges of the *peritonæum*, by the adhesive inflammation. And it is very probable, that, in most cases, an adhesion of the wounded part of the *peritonæum* to the surface of the abdominal *viscus*, or *viscera*, which happen to be in contact with it, takes place.

If the uterus were not a contractile organ, the wound, made into it, would continue to correspond with the external wound, and, as soon as the divided edges of the *peritonæum*, investing the forepart of the *abdomen*, had become united by the adhesive inflammation, with the divided edges of this membrane, as reflected over the anterior part of the uterus, the cavity of the abdomen would be rendered complete, and, consequently, the danger to be apprehended from its inflammation would be greatly diminished, if not obviated. The cavity would no longer be exposed to the influence of air, or to the fluids, effused from the wound of the uterus, and the inflammation, affecting the divided edges of the *peritonæum*, would be prevented from spreading further by the adhesion, that had taken place,

betwixt them and the uterus. But the very great degree of contraction, which necessarily takes place in this organ, when the fetus and secundines are extracted, renders it scarcely possible to make the two wounds correspond exactly: Even if the ingenious mode of operating, adopted by Baudelocque,* should be employed, the lower angle of the uterine wound would, I think, be generally situated much lower than the abdominal wound, and would be liable to be still further removed from it, by the interposition of the bladder, when in a state of distention. If it were not for this necessary contraction of the uterus, the danger of the cesarean operation, in as far as it arises from inflammation of the cavity of the *abdomen*, might probably be much diminished by sewing the lips of the abdominal and uterine wounds together; as, by this practice, the union of the uterus with the abdominal *parietes* would be facilitated; the cavity of the *abdomen* would be less exposed, and the discharge of blood &c. from the uterus would be made partly by the external wound, and partly *per vaginam*. From the case of M. Baufels, mentioned by Lauverjat, it is proved, that the uterus, after a successful cesarean

* See the note in page 302.

birth, has become united with the abdominal *parietes*, and, therefore, should this woman conceive again, and have occasion to undergo the operation a second time, it is probable, that the abdominal cavity will not be exposed in the second operation, if the incision be made in, or near the same place; whence the second operation will be much less dangerous than the first; and it is upon this ground, that I am induced to believe that some, at least, of those cases may be authentic, in which a woman is stated to have undergone the operation several times. Indeed, if this circumstance did not take place, I apprehend, that no good reason could be assigned, why a woman, who has survived hysterotomy once, should not be able to survive it a second and a third time, or oftener.

V. *Of the Treatment of the Patient after the Operation.*

In the subsequent treatment we must endeavour to obviate, or remove those accidents or conditions, which constitute the sources of danger, and have been enumerated above.

1. To prevent, as much as is in our power,

the *shock*, given to the constitution, by the operation itself, and to obviate its effects, a moderate quantity of wine, and a pretty large dose of *Tinctura Opij* may be given, previously to the operation. The dose of *T. Opij* may be repeated, immediately after the operation, if the former dose shall have been rejected by vomiting. And, should the symptoms of irritation increase, so as to become very alarming, we should endeavour to moderate, or remove them by repeated smaller doses of the same remedy. Wine and volatile alkali may be also employed with the same intention, provided they be not contraindicated by a too profuse discharge of the *lochia*. But, if neither excessive debility, vomiting, dyspnœa, delirium, nor any very urgent symptoms supervene, I am of opinion, that a strict antiphlogistic regimen will be all, that is requisite during the first twenty-four hours.

2. When, during the operation, the patient has lost more blood, in consequence of the division of a large portion of the placenta,* or of

* I have mentioned already (See Defence &c. p. 46.), that M. Lauverjat thinks it of advantage, to encourage the bleeding, during the cesarean operation, by separating a part of

one or more large blood vessels * (independently on the former circumstance) than she could bear without detriment; or when the lochia have been observed to pass in too great quantity through the uterine wound; in all these cases, and more especially if the patient were previously debilitated, it will be necessary to prevent

the placenta, and covering the wound with a glass funnel; but this is a practice, which I would by no means recommend. We should endeavour, more especially when we operate upon women, who are much debilitated, to finish the operation with the loss of as little blood as is possible, and, I would, therefore, advise, that the placenta should not be divided at all, if it can well be avoided. Should our patient not lose a sufficient quantity of blood, during or after the operation, we can easily employ general and topical blood-letting to the extent, that we think it is indicated: But, if we promote the discharge of blood during the operation, and the *lochia* should afterwards flow too profusely, a circumstance which frequently happens after a natural labour, we shall have reason to regret, that we did not proceed differently. Besides, it is to be remembered, that some debilitated constitutions cannot bear the loss even of a moderate quantity of blood, when abstracted quickly, without very alarming symptoms being produced.

* If any large blood vessel should be wounded, which may require a ligature, it should be secured by means of the tenaculum, in preference to the needle, if practicable.

the lochial discharge from becoming immoderate, or greater than she can support with advantage, by employing, from the first, those remedies, which are found useful in restraining uterine hemorrhages, viz. cold air, cold liquids, acids, alum &c; and, if a powerful astringent should be required, the injection of cold water, or a cold solution of alum, with about sixty drops of *T. Opij*, into the *rectum* will be found very useful. An *enema*, given with this view, should not exceed five or six ounces, lest its bulk should prevent its being retained: But no *tampon* should be employed, nor should any injection be thrown into the vagina——To prevent the lochial discharge from passing into the cavity of the *abdomen*, a moderate degree of pressure should, in all cases, be applied to the uterus by the hand, when it is supposed that the flannel bandage does not act sufficiently upon it.

3. To obviate or remove spasmodic and convulsive affections, the remedies, found useful in these complaints, when arising from other causes, are to be employed.* And it is only necessary

* These remedies have been noticed briefly, in p. 243. &c.

to observe further, respecting the treatment of convulsions, occurring after hysterotomy, that blood-letting will rarely be indicated. When convulsions occur, during the operation or very soon afterwards, they may properly be considered, as a symptom of irritation, and be referred to the first source of danger, viz. the shock given to the constitution.

4. To obviate inflammation of the general cavity of the *abdomen*, the patient should be kept as much as possible in one position, that the divided edges of the *peritonæum* may unite as soon as possible with each other, or with the *viscera*, lying in contact with them, and thus render the cavity complete, except in as far as the uterine wound is concerned. A very strict observance of the antiphlogistic regimen should be enjoined, and, if the patient's strength will admit of it, blood-letting may be employed. Should symptoms of inflammation of the cavity and *viscera* of the *abdomen* arise, blood-letting, general or topical, purgatives, neutral salts, antimonial preparations, fomentations, blistering, and glysters, of a laxative or emollient nature, are to be employed, and repeated, according to the circumstances of each particular case. If the inflam-

mation terminate in the formation of pus, or a collection of serous fluid, it may be necessary to evacuate these by a puncture or incision, and to support the strength of the patient by the *Cortex Peruvianus*, Cordials, &c. If a Gangrene be apprehended from the extreme debility, hiccup, cessation of pain &c, Wine, Bark, Opium, Volatile Alkali with Musk &c. may be had recourse to, but very little expectation of recovery can be reasonably entertained under these circumstances.

Of the Cesarean Operation, as practised upon the dead female.

Having established the propriety and necessity of performing the operation of hysterotomy upon the living female, under certain circumstances, for the preservation both of herself and her offspring, and also for the preservation of her own life only, when the *fetus in utero* is known to be dead, I shall proceed to consider the *propriety*, *origin*, and *event* of this operation as practised upon the dead female, with the view of preserving the life of the child; and shall conclude this part of my subject with some observations on the expectations of success, that may be entertained

in different cases, according to the cause and circumstances of the death of the parent.

The *Propriety* of the Cesarean operation, in this case, has never been called in question, since the mother cannot be injured, and the child has occasionally been preserved by it. But, since it is sometimes difficult to distinguish betwixt apparent and real Death, it has been recommended, that, in all ambiguous cases, wherein the state of the *os uteri* will admit of it, the mode of delivery *per vaginam* be adopted in preference. And in support of this opinion the case, which occurred to M. Rigaudeau, is adduced from the *Journal des Savans* for January 1749. This Surgeon being called to a woman in labour in the country, learnt on his arrival, that she had been dead two hours, and that her friends had not been able to find any person, who could perform the cesarean operation. Finding, that she was still warm, that her limbs preserved some degree of suppleness, and that the orifice of the womb was much dilated, and the waters collected, he introduced his hand into the uterus, and brought the child by the feet through the natural passages. The child appeared to be dead; but by proper attention was recovered. He desired the attend-

ants not to remove the mother till her limbs were stiff; and was agreeably surprized to hear, that she was resuscitated two hours after he had left her. Both the mother and the child were living in the year 1748, but the former remained paralytic, deaf, and almost speechless.

With respect to the *Origin* of this operation, it is generally understood to have been had recourse to, at a much earlier period upon the dead than living subject. It is, however, very difficult, if not impossible, to ascertain the time, when it was first practised. It is first noticed, I believe, by the ancient Mythologists and Poets; who were particularly fond of ascribing marvellous births and parentage to their Gods and Heroes. According to Ovid, *Æsculapius*, the god of Physic, owed his birth to this operation, and no less a personage than *Apollo* was the operator:

“Non tulit in cineres labi sua Phœbus eosdem
Semina, sed natum flammis uteroque parentis
Eripuit.” *Metamorph. Lib. 2. Fab. 8.*

And from the circumstance of his having been born in a similar way, *Virgil* represents *Lycas*, one of his heroes, as sacred to *Apollo*:

“Inde Lycam ferit, exsectum jam matre peremta,
 Et tibi, Phœbe, sacrum, casus evadere ferri
 Cui licuit parvo.” *Æn. Lib. x. Lin. 315 &c.*

Although no one will be inclined to consider these accounts as authentic, I have thought it proper to bring them forward, because it is not improbable, that the practicability of this mode of preserving the child's life was first suggested by them.

It is more difficult to determine, what degree of credit is due to the account, given by Pliny, of the birth of Scipio Africanus, the first of the Cesars, and Manilius; all of whom, according to this author, were extracted from the wombs of their dead mothers. “*Auspiciatus enecta parente gignuntur: sicut Scipio Africanus, primusque Cæsarum * a cæso matris utero dictus: qua*

* The words *primusque Cæsarum* have been doubly misunderstood: For 1st. Servius, Suidas, and some others have applied them to Julius Cesar the Dictator; although Pliny evidently meant the first of the Cesars; since he must have known that Aurelia, the mother of the Dictator, was living after her son was able to bear arms. And the most ancient Cesars, according to Bayle, enjoyed some dignities at Rome, as early as the eleventh year of the first Punic War. 2dly. Solinus chose to read *primusque Cæsar*, instead of *primusque*

de causa & Cæsones appellati. Simili modo natus est Manilius. Hist. Nat. Lib. VII. Cap. 9. Since no preceding, or cotemporary author has confirmed this passage; since the authority of

Cæsarum, and has considered Pliny, as intending to express, that Scipio Africanus was the first named Cesar, an error into which Rousset, C. Bauhin, and some others, as well as yourself, have fallen. You say "Pliny informs us that Scipio Africanus was extracted by the Cesarean section, after the death of his mother, and that he was the first called Cæsar a cæso matris utero." *Reflections &c.* p. 4. But it does not appear, that Scipio ever was named the first of the Cesars, except by those who have mistaken Pliny; and the following note upon this passage is very properly given in the Edition of Pliny in Usum Delphini. "Cave enim Scipionem intelligas: cum sermo sit de Cæsarum stirpis auctore, cui par cum Scipione nascendi modus, ac præterea ex ea re nomen." Vol. I. p. 378. If Pliny had intended to assert, that Scipio was the first of the Cesars, he would, I think, have expressed himself very differently. Respecting the origin of the name Cesar, different opinions are entertained: Some, as Nonnius &c, agree with Pliny. Some are of opinion, that this surname was given to the Julian family, because one of them killed, or kept an elephant, which bears the same name in the Punic tongue. See Lempriere's Classical Dictionary. Others again say, that it was owing to one of them having blue eyes (*oculos cæsios*). But the opinion of Festus is the most probable, who says "Cæsones appellantur ex utero matris exsecti: Cæsar, quod est cognomen Juliorum, a *cæsarie* dictus est, quia scilicet cum cæsarie natus est." *De Verborum Signif.* Lib. 3.

Pliny is often questionable; and since this account is introduced by some strange superstitious notions, relative to the good or bad fortune of children, according to the manner, in which they are brought into the world; many persons will, perhaps, be induced to suspect the authenticity of it. Tertullian, however, agrees with Pliny, concerning the birth of Scipio; He says, "Scipio Africanus major appellatus, cæso matris Pomponiæ utero, in lucem prodiit." Lib. de Anima C. 25. p. 283: And Solinus and Silius Italicus have adopted the same opinion. *Scipio Africanus* died 184 years before the Christian Æra: And I am inclined to believe, that, if either he, or the first of the Cesars, or Manilius, had actually been brought into the world by hysterotomy, Celsus, who lived before Pliny, would not have failed to take notice of this method of preserving the life of the child after the death of its mother; as he has given us particular directions for delivering women of dead children, by the use of the crotchet. But, although there is great reason to doubt, whether Scipio Africanus, and the first Cesar owed their births to hysterotomy, practised after the death of their mothers; and although it is certain, that this was not the case, with respect to Julius Cesar, the Dictator; it is

equally certain that the appellation *cesarean birth* (enfantement cesarien) was first used by Rousset; and first applied by him to the operation of hysterotomy, as performed upon the living female; because, as he erroneously states, Scipio Africanus, the first of the Roman Emperors, was cut out of his mother's womb, and thence obtained the name of Cesar.*

Of the *Success* of the operation, in later times, I have been able to find only the following examples. From Caspar Bauhin's Epistle, prefixed to his Translation of Rousset's Treatise, it appears that *Bruschi* mentions two persons, brought alive into the world after the death of their mothers. The first of these is Burcardus Count of Cinkgaw &c. He was born in the year 959, and styled *Ingenitus* from the circumstance of his birth. The other is Gebhardus, son of Utho, Count of Bregen, who was made Bishop of Constance in the year 1001.

Robert the 2d. of Scotland is said to have been

* "Tametsi ab ea Romanorum Imperatorum primus, Scipio videlicet Africanus, ex matris utero, hoc uti dicimus pacto, sectus, Cæsaris nomen sortitus sit, & ad illius imitationem, hunc nostrum partum Cæsarei nomine inscripserimus." Sect. I. C. 1. P. 2.

born after the death of his mother. "In the year 1317, when she" (his mother Marjory Bruce) "was big with child, she broke her neck in hunting, near this place" (Paisley): "the Cesarean Operation was instantly performed, and the child taken out alive, but the operator chancing to hurt one eye with his instrument, occasioned the blemish, that gave him afterwards the epithet of Blear-Eye, and the monument also is styled that of Queen Bleary." Enc. Brit. Ed. 3. Vol. 13. p. 660.

Charles Estienne informs us, that he has performed the operation with success, which he has minutely described, and illustrated with a plate. The following curious extract is given from his work, entitled *La Dissertation des Parties du Corps Humain*, printed at Paris in 1546. "Et si tu congnois par la pulsation, ou apercepvance exterieure du poulx, que le dict enfant soit encor vivant : adonc te fault, la mere estant à l'article de la mort, et devant qu' elle jette le dernier souspir, lui tenir la bouche ouverte, avec ung petit baillon, faict en triangle : du quel le hault soit posé vers les dentz de dessus : & le bas vers celles de dessoultz, a celle fin que l' enfant ne soit suffoqué ou estouffé, a faulte de pouvoir prendre ou recepvoir vent. Et oultre seroit neces-

saire, que la sage femme ne bougeast la main de l'entrée de la matrice : en retenant et arrestant, de tant qu' il lui seroit possible, les cuisses de la patiente séparées & courbées, jusques a ce qu' elle eust rendu le dernier soupir. Au quel temps ne fault faillir a faire soubdainement la section en la maniere, et au costé qui t' est cy dessus escript & démontré par figure : en tenant touteffoys la bouche de la dicte patiente, & aussy l' entrée de la matrice tousiours ouverte. Et par ce moyen tu pourras aisement tirer le fruict encor vivant hors du corps de la mere morte. Ce qu' avons aultrefois esprouvé & apperceu, non sans grand merveille de ceulx, qui estoient presens, & assistants." Liv. III. p. 284.

Guillemeau* relates, that he has performed the Cesarean operation upon the dead female suc-

* De la Grossesse &c. p. 226. He also informs us, that Sanctius, king of Navarre was thus brought into the world. "La mere du quel allant à la chasse estant rencontrée par les Sarrazins, fut blessée au ventre, par la quelle blesseure le bras de son enfant sortit, ce qu' estant reconnu par un Gentil-homme nommé Geuarra, il tira l' enfant par la dite playe & le nourroit en cachette ; mais comme il y eut controverse de l' election d' un Roy : le dit Geuarra l' exposa aux princes, & fut cause d' appaiser leurs querelles ; & pour cet insigne larcin, la maison de Geuarra eu le nom de *Ladron* en Espagne."

cessfully, in different cases, and amongst others, upon Mad. Le Maire, attended by his uncle M. Philippes, and upon Mad. Pasquier, in the presence of M. Paré and the Curé de St. André des Arts. He gives some directions for the performance of the operation, and for determining whether the mother be really dead. And he says it ought to be performed in a well regulated republic, adding "*Iurisconsulti eum necis damnant qui gravidam sepelierit, non prius extracto foetu, quod spem animantis cum gravida peremisse videatur.*"

Hor. Eugenius mentions a cesarean operation, performed with success after the death of the mother. (Epist. Med. Venet. 1602.)

Viardel says, that he delivered the wife of W. Filet, a barber, in March 1663, by this operation, under the direction of M. Perreau, Physician to the Hotel Dieu. This woman died of a Quinsy. Her child lived half an hour, and was baptized by the Vicar of St. Jaques, in the presence of several person, whose names are given.*

Purman gives two cases, wherein the children were preserved by this operation, after the death

* Obs. sur la Pratique des Acc. p. 172.

of the mother :* in the former of which the mother died of a complaint in the uterus.

Mauriceau† relates the case of a woman, who died of a continued fever; The child was extracted after her death by the Cesarean Operation, and lived two hours, *Obs.* 315. And in *Obs.* 593. the case of a woman is given, who died of a Quinsy with fever. The child was brought into the world, by this operation, with some remains of life, a slight palpitation being perceived about the region of the heart.

De la Motte informs us, that he has performed the operation upon the dead female in some cases with success, but he neither has given the number of instances, nor any particulars relative to them.‡

An account of a fetus, extracted alive from the uterus of its dead mother by this operation, is given in *Breslauer Samlungen.* T. III. Vers. 4.

Cornelius Gemma is said to have cut a living child out of the womb of its dead parent.**

* *Chirurg. Curios.* P. 2. Cap. 10. † *Obs. sur la Grossesse &c.* ‡ *Traité Complet de Chirurgie* Tome IV. p. 78. ** *Sennert Pr. Med.* L. IV. P. 2. C. 8.

Car. Stephanus says, that he has several times succeeded, in extracting a living child by hysterotomy, after the death of the mother.**

To the above cases may be added a few more successful ones, collected by Heister,* Haller,† and Burton,‡ from Stalpart Van der Wiel, Ioh. Matthæus, Voelterus, V. D. Sterren, Bertrand, Morgagni, Hagendorn, Veslingius, and Dethardingius.

The Cesarean Operation has been several times performed in England, and, in some instances, very soon after the death of the parent, but has never, I believe, succeeded.

Admitting the authenticity of *all* the cases, mentioned above, of which some are, doubtless, very questionable, we shall have but little reason, from former experience, to expect success from this operation, performed after the mother's death, when we consider, that the operation has been practised during many centuries, and especially when we advert to this circumstance, that,

** De Dissect. Part. C. H. Lib. III. C. 1. * Inst. Chir. P. II. p. 756. † Elem. Phys. V. VIII. p. 187.
‡ Essay &c. p. 73.

in some states,* laws have been enacted to enforce the performance of it upon all women, who die undelivered in the latter months of pregnancy, and to prevent its being performed in an improper manner.

This smallness of the number of successful cases is imputable, in part, to the time which has been suffered to elapse between the death of the parent, and the performance of the operation ; and in part to the nature of the case.

1st. By many writers it has been erroneously supposed, that the *fœtus in utero* may survive its mother several hours, and, therefore, that it is not absolutely necessary for its preservation, that the operation should be immediately had recourse to. And those practitioners, who consider the immediate performance of the operation indispensable to the safety of the child, have often delayed the

* Namely Rome, Venice, and Sicily. See Digest. Lib. XI. t. 8.—Melli de Arte Obstetr. p. 353.—Cangiamila in Embryologia Sacra p. 255 & seq.—Heister is of opinion, that the relations of the deceased should be severely punished, when they prevent this operation from being performed ; and he complains bitterly of a man at Helmstadt, who threatened to shoot him, if he entered the house, to extract the child from his dead sister.

extraction of the fetus too long, either for fear of incurring blame, if there should be any remains of life in the mother ; or because the consent of the relations could not be instantly obtained.

2dly. The nature of the case is such, that success cannot reasonably be expected, except in a small proportion of instances, when the operation is performed with every advantage. For, although it be proved by injecting the gravid uterus, and by the pulse of the mother and fetus not being synchronous, that the communication betwixt them is not by means of continuous arteries and veins, and that the fetal circulation is carried on by the action of its own heart and blood-vessels ; it is also proved by compression of the *funis umbilicalis** that the circulation of the blood can only

* Although no doubt, I presume, will be entertained by those physiologists, who have attended to the dangerous and too frequently fatal effects, occasioned by the compression of the *funis umbilicalis* of an unborn fetus, that, so long as the communication between the mother and fetus is uninterrupted, the blood of the latter derives oxygen, or some substance necessary to life, from the former ; and also imparts carbon, or some substance injurious to the animal economy, yet these circumstances have never, I believe, been determined by actual experiments. It may *a priori* be inferred, that the arterial and venous blood, in the *funis umbilicalis* of a fetus in utero, differ in their proportions of oxygen and carbon, and

go on for a short time in the *fetus in utero*, independently on the mother. It may be assumed

that the blood passing through the umbilical arteries is more highly oxygenated than that, which passes through the vein: But it would be more satisfactory to have this circumstance ascertained by experiments; and, as my opportunities are, at present, insufficient, I shall content myself with suggesting the two following methods of determining this point by a series of experiments, viz.

1st. Immediately after the birth of the child, let the funis be doubled, and a ligature applied round it, in such a manner as to include a portion five or six inches in length; let another ligature be applied nearer to the abdomen of the child; then cut off the doubled portion of the funis; and, having opened an artery, and a vein, as expeditiously as possible, attend to the colour of the blood, issuing from them. If the blood, which flows from the vein, be found more florid, we may consider it as proved, that the venous blood is more oxygenated than the arterial, whilst the fetus remains in utero: But if the blood, flowing from the artery be found more florid, the contrary may not be proved; because it may have happened, that the oxygenation of the venous blood was imperfectly performed, or totally suspended in the placenta, after the uterus became empty, or nearly so; or it may have happened, that the fetus had breathed before it was completely expelled, a circumstance, which sometimes takes place as soon as the head is born. Either of these circumstances may occasion a result, diametrically opposite to what takes place in the fetus *in utero*; for, in the former case, the venous blood will contain less than its due quantity of

as a fact, that the respiration of the mother is necessary for the oxygenation of the fetal blood, though it may not be easy to shew, in what manner precisely this effect is produced in the *placenta*. For, when the communication betwixt the parent and fetus is completely obstructed by the compression of the *funis*, the blood of the fetus

oxygen, considered either absolutely or relatively; and, in the latter case, the arterial blood will be more than usually oxygenated on account of the air inspired by the fetus. It is scarcely necessary to observe, that the fallacy of the experiment will be still greater, when both the above circumstances are combined.

2dly. Let the uterus of a living animal be opened, so as to avoid injuring the placenta; let a portion of the funis umbilicalis be drawn out at the wound, and, an artery and vein being punctured, let the blood issuing from them be carefully compared. In this way, a single experiment will be more decisive; for the contraction of the uterus will be no greater, than what arises from the discharge of the *liquor amnii*, a degree of contraction, which, we know, does not materially affect the oxygenation of the fetal blood; and, if the experiment be properly conducted, the respiration of the fetus will not take place, so that the two principal causes of fallacy, occurring in the former method, will be completely obviated. And, moreover, the properties of the blood will not be changed, in consequence of being detained in the blood-vessels, which may happen, when a ligature is made upon the umbilical cord, some time before the artery and vein are opened.

soon becomes incapable of exciting the contraction of the heart, animation is suspended, and, unless oxygen be again speedily supplied, its life ceases altogether.

From the above observations the following conclusions may be drawn, 1st. that a fetus may survive the death of its mother for a short time ; 2dly. that, if the operation be instantly performed, the child may be extracted, before the circulation of the blood is stopped, or (if the action of the heart have ceased) before the child is in an irrecoverable state, provided the means for restoring suspended animation be immediately applied ; the most efficacious of which are inflation of the lungs, and the application of warmth ; and, 3dly, that, if any material delay take place, the fetus will in almost every instance be lost.

As in cases of Drowning, Hanging, Suffocation, and Compression of the *Funis umbilicalis*, by the head or trunk of the fetus, the patient is, in some instances, found to be in a recoverable state longer than in others, the same circumstance may be reasonably supposed to take place in the fetus, when the mother dies previously to her delivery.

It appears probable to me, that the chance of preserving the child by the Cesarean operation, is materially influenced by the circumstances of the mother's death. If the parent be destroyed in full health, either by an external injury, or by some internal cause of sudden death, the prospect of saving the fetus, by an immediate operation, will be greater, because we may consider the blood of the fetus as properly oxygenated, till the very instant of the death of its parent; and, therefore, the fetus, being at that time in perfect health, may be expected to survive its mother as long as a new-born child would remain alive, or in a recoverable state, when completely submersed in water of a temperature, equal to that of its own body. On the contrary, if the vital functions of the mother, in consequence of a flooding, or any other disease, have been very imperfectly performed for some time previously to her death, it may be presumed that her own blood will neither be sufficiently oxygenated, nor carried to the extremities of the arteries going to the *uterus*; and, consequently, that the fetus, though it should not participate, in any other way, of the disease of the parent, may either die before her, from want of the necessary supply of oxygen; or may be so much debilitated, that it cannot be expected to survive

its mother for a longer time than a new-born child, previously weakened in an equal degree by breathing an under-oxygenated atmosphere, would retain its living principle, after complete submersion in water of about 98 degrees of Fahrenheit's Thermometer.

In either case, but more especially in the latter, we cannot reasonably expect to preserve the life of the child after the death of its mother, unless we undertake the operation very soon after she has expired, and extract the fetus with all possible expedition. We should, therefore, previously obtain the consent of the friends, when this can be done, that no unnecessary delay may be occasioned. And we should also be provided with the means for restoring the child, that we may instantly apply them, if it should be born apparently dead.

Of Embryulcia, or Cephalotomy.

You have asserted, that "the introduction of the Forceps by the Chamberlen's was not a greater improvement in the practice of their time, for the preservation of the child, than Dr. Osborn's method of delivering by the crotchet, for the preservation of the mother. It marks a new

Æra in the practice of Midwifery ; and, from the time of his delivery of Elizabeth Sherwood, by the crotchet, the Cæsarean section has been rendered unnecessary, simply on account of the narrowness of the pelvis."† That the last assertion is erroneous, you must be abundantly satisfied, from the case of Elizabeth Thompson, who was placed under your own care : And I shall now endeavour to convince you, that the encomium, which you have passed upon Dr. Osborn's mode of delivering by the crotchet, is extravagant, and unmerited.

In reviewing the opinions, and practical precepts of Dr. Osborn, with respect to Embryulcia, it will be convenient to arrange and examine them, as they relate to the following heads, viz. 1st. Circumstances, with which it is necessary, or desirable to be acquainted, previously to the operation. 2d. Circumstances, necessary to be attended to, with respect to this operation.

I. Of the circumstances with which it is desirable or necessary to be acquainted, previously to the operation's being resolved upon.

These circumstances are two, namely, the *capacity of the pelvis*, and the *bulk of the fetal cranium*.

† Detection, p. 65 and 66.

1. The use of the perforator and crotchet being principally required, on account of the deformity of the pelvis, I shall, in the first place, consider the means of determining the nature and degree of this deformity. It is not sufficient to know the space between the *symphysis pubis*, and the *os sacrum*, or in any one point from the fore to the back part. It is necessary, or, at least, it is advantageous in many cases, that the accoucheur should make himself well acquainted with the form and dimensions of the tube or cavity of the pelvis, and of both its apertures, especially the superior. To effect this with the requisite accuracy, I know from experience to be by no means easy, and, consequently, I cannot, agree with Dr. Osborn, that "we can readily determine by the introduction of the fingers into the vagina, what are the absolute dimensions of the pelvis."* Several foreign accoucheurs, sensible of the difficulty of ascertaining precisely the dimensions of the superior aperture, by the introduction of the fingers, or of the hand into the *vagina*, and very properly considering the accurate determination of the dimensions of this part of the pelvis, as a point of primary importance, have been laudably employed in in-

* Essays, page 90.

venting instruments, for the purpose of measuring it with greater exactness; although their use, as will be shewn hereafter, is much more limited than has generally been supposed. To these instruments the name of *pelvimeters* has been given.

Of these instruments the graduated probe is the most simple, both in its construction and application. It is introduced *per vaginam* in such a manner as to apply the blunt end to the projection of the *os sacrum*: It is then observed, upon what part of the probe the inside of the inferior margin of the *symphysis pubis* rests: And, half an inch being deducted from the space included between these two points, the remainder shews the extent of the antero-posterior diameter, extending from the superior inner margin of the *symphysis pubis* to the *sacrum*.†

† Dr. Aitken of Edinburgh used a graduated female Catheter—Stein's *Beckenmesser* is made of wood, and is four inches and a half long. It differs from the graduated probe only in having a kind of slide upon it; which, when the blunt extremity is passed on to the projection of the sacrum, is moved into contact with the *symphysis pubis*. The instrument is then withdrawn and examined: And the distance betwixt these two points of the pelvis is found in inches

The *Pelvimet* of M. Coutouly (see Pl. XII. Fig. 2. B.) consists of two pieces of metal, each of which has one of its extremities bent upwards, at a right angle. The under piece is semicylindrical, and has a deep groove, or channel in it. The upper piece is a complete cylinder, which slides in the groove of the other, and has a graduated scale at one end. When this instrument is used, the bent extremities are placed in contact, and it is introduced *per vaginam*, till the extremity of the under, or grooved piece of metal rests against the middle of the protuberance of the *os sacrum*; the upper, or cylindrical piece of metal is then drawn out, till its bent extremity comes in contact with the *symphysis pubis*; when, by examining the scale, the distance from *pubis* to *sacrum* will be found in inches and parts of inches.† One objection, which is particularly applicable to this instrument, is, that it cannot well be employed, when any part of the head has descended into the tube of the pelvis.

The *Compas d' épaisseur*, to which Baudelocque and parts of inches. See Stein's *Practische Anleitung zur Geburtshülfe*. Pl. II. f. 4.

† See Baudelocque, Tome I. p. 9.

gives the preference as more certain and convenient, is applied externally. This instrument is nothing more than a pair of Callipers, with a Scale annexed (See Pl. XII. f. 2. A.); and is used in the following manner: The extremity of one branch is applied to the middle of the *Mons Veneris* upon the *symphysis pubis*; and the other to the centre of the depression of the base of the *sacrum*, a little under the spine of the last lumbar *vertebra*. The distance of these two points is then taken, by examining the scale; and, if the woman be thin, three inches are deducted from this thickness, (viz. half an inch for the thickness of the *pubes*, &c. and two inches and a half for the thickness of the *sacrum* &c.): So that when the whole thickness of the pelvis is thus taken, and measures seven inches, the antero-posterior diameter of the superior aperture is taken at four inches; when it measures six inches, this diameter is estimated at three inches &c. The result of this admeasurement, in several experiments, has been found so accurate, on opening the body, that it has never deviated more than one line from the estimate, made by Baudelocque.—When the patient is very fat, one or two lines more are to be taken off, on this account, from the thickness given by the measurement made exteriorly.†

† See Baudelocque, Tom I. §. 130.

However desirable it may be to know *exactly* the distance from *pubes* to *sacrum* at the superior aperture of the pelvis, and however accurately this may be taken by the instruments, just described, they are all liable to the following objections: They are not only insufficient, but may deceive us: They can give us no information, relative to the general figure of the superior aperture; they neither make us acquainted with the extent of the transverse, nor of the oblique diameters; they do not inform us, on which side of the pelvis there is the most space; they do not inform us whether the diameter, taken from the centre of the base of the *sacrum* to the *symphysis pubis*, is greater or less than the distance on each side of the *os sacrum*, from the fore to the hind part of the pelvis. And in a case of *exostosis*, the pelvis may be supposed to be well formed, when thus measured, though in reality it be much distorted. An accoucheur may, indeed, make himself acquainted with some of these circumstances, from knowing, whether the distortion of the pelvis has been produced by *malacosteon*, or *rachitis*;† and also from paying attention to the

† See above page, p. 186—194.—It does not appear, that persons, who have been ricketty in their infancy, are more liable to be affected with malacosteon in the

exterior form of the pelvis; for example: If the symphysis pubis be too flat, he may conclude, that the pelvis is as much contracted from the *symphysis pubis* to the *os sacrum*, as in any other part from before to behind, or even more; except in some instances of great obliquity of the superior aperture, such as is shewn in Pl. VI: If, on the contrary, the *pubes* be too prominent, forming a kind of peak, he may conclude, that the pelvis is more contracted from before to behind on each side (especially opposite to the *Acetabula*) than at the *symphysis pubis*.

But neither the use of the pelvimeters singly, nor conjoined with an external examination of the pelvis, is sufficient for the purposes of the accoucheur, in some instances of extreme deformity of the pelvis. To acquire the necessary information, upon the points specified above, an accurate examination of the superior aperture, by the introduction of the fingers, or the whole

adult state. Indeed, I am unacquainted with a single instance of a pelvis, distorted by Ricketts becoming further contracted in consequence of the latter disease. If this combination of deformity of the pelvis should ever happen, it might soon proceed to a degree, of which we have hitherto had no examples. Suppose M. Rhodes to have become affected with Malacosteon, as the space from the symphysis

hand into the *vagina*, is also requisite. The hand is tolerably well adapted to this mode of inquiry. The forefinger may be used alone, in the manner of the graduated probe, by placing the point of it upon the middle of the promontory of the *os sacrum*; by observing upon what part of it the inferior margin of the *symphysis pubis* rests, and afterwards applying it to a scale. The breadth of one, two, three or more fingers at their points, and at the different articulations, may be used to take the antero-posterior diameter in various other points, as well as at the *symphysis pubis*: And by thus using a single finger, or two, or more and either with or without the thumb, a measure of from half an inch to about four inches may be formed.†

When the hand is employed in measuring the pubis to the top of the *sacrum* measured only $\frac{2}{3}$ of an inch, in a very short time, the widest point from before to behind in the superior aperture of the pelvis might not have exceeded the dimension just specified.

† Dr. W. Johnson has entered very particularly into this subject, and has particularized the different positions and conjunctions of the fingers, and thumb, proper for forming the hand into a measure of the pelvis. See his *System of Midw.* page 288.

different diameters of the superior aperture of the pelvis, the accoucheur is liable to be misled from different causes, however careful he may be. These causes of error I shall now proceed to point out.—*a.*) I have already shewn, that the superior aperture of a well formed pelvis is inclined, so as to be considerably lower at its anterior than at its posterior part. And it must now be remarked, that, in general, the same circumstance is observed in deformed *pelves*; although in some instances, the *symphysis pubis* is placed as high, or even higher than the top of the *os sacrum*.† Where the *os sacrum* is situated higher than the upper margin of the *symphysis pubis*, on introducing two or more fingers betwixt them, according to the degree of contraction, and finding the fingers to be in contact with the *os sacrum* and the *ossa pubis* at the same time, we may be induced to believe that the diameter is only two, or three fingers breadth in extent, when the distance is actually greater, unless we take great care to have our fingers placed exactly in the axis of the superior aperture. This will be more easily understood, by turning to the vertical section of the pelvis, given in Plate IV, and placing the points of your three fingers

† See Defence &c. p. 183.

upon the line A B, with the middle finger, throughout its whole length, over the line H D; and afterwards placing your three fingers, in such a manner, that the point of the third finger shall touch the *os sacrum* at A, and the joint of your forefinger shall touch the *os pubis* at F. In the former mode of applying the fingers, there will be an evident space betwixt the *os sacrum* and the finger at A, and about an equal space betwixt the *ossa pubis*, and finger at B; whilst in the latter the fingers and bones will be in contact; so that according as accoucheurs apply their fingers more or less properly, in measuring the antero-posterior diameter of the superior aperture in the living female, they will differ more or less, concerning the extent of this diameter, and approach more or less nearly to the true dimensions—*b.*) A second cause of error is the change, induced in the thickness of the soft parts, lining the entrance into the cavity, or tube of the pelvis. These parts, in consequence of long continued pressure, made by the head or other parts of the child, sometimes become considerably tumefied; whence the distance betwixt the *ossa pubis* and *sacrum* appears to be much smaller than it really is*—*c.*) A part of the child's head,

* See Hamilton's Letters to Osborn. p. 82 &c.

or the *cervix uteri* may occupy the superior aperture of the pelvis, and prevent us from making an accurate admeasurement.

From one or other of the above causes it has happened, I suspect, that Dr. Osborn has underrated the dimensions of Sherwood's pelvis. I am the more convinced of this; because, in the case of Ann Lee, the dimensions, from the fore to the back part of the superior aperture of the pelvis, did not in any point appear to me to exceed one inch and a quarter, and the gentlemen, who attended at the operation were very nearly of the same opinion; and yet, upon dissection, we found, after the removal of the soft parts, that the space betwixt the *os pubis* and *sacrum* was equal to one inch and five eighths, at the *symphysis*; and $1\frac{1}{16}$ inch at the widest parts on each side. From this and a former case, which occurred to myself, I am of opinion, that it is extremely difficult to determine the dimensions of the different diameters of the pelvis, within less than a quarter of an inch, except when they are of less extent than one inch. And it will, I believe, generally happen, that the dimensions will appear smaller to the accoucheur than they really are.†

† I am happy to find that my sentiments, upon this sub-

The second circumstance, which it is necessary, or desirable to ascertain, previously to our determining to perform the operation of embryulcia, is the size and compressibility of the head of the fetus ; for it must be obvious to every one, that, if the head of the fetus be very small, it will pass without being opened through a pelvis, which will not admit a fetus of the ordinary size to pass until we have removed the encephalon ; and it must be equally obvious, that a small or a middle-sized fetal head, when reduced as much as possible by the perforator and crotchet, may pass through a pelvis, which is too narrow to admit of the extraction of a large sized fetal head through it by means of these instruments.

ject, correspond with those of Prof. Hamilton, who says, "If the truth of these remarks be allowed, it will be obvious, that mathematical precision in the mensuration of the pelvis can never be attained ; and it may, perhaps, be thence inferred, that it is impossible to determine within a quarter of an inch the dimensions of the brim of any deformed pelvis (cases of extreme deformity are excepted) in the living body." Letters p. 87. This author also very properly observes, that the fingers, from being susceptible of compression, and capable of lying over each other in a variety of degrees, cannot be regarded as affording the means of measuring the superior aperture of the pelvis with the requisite accuracy. Ibid. p. 88, 89.

The following case, related by Weidman, places the advantage of knowing the relative size of the child's head, compared with the capacity of the pelvis, in a very striking point of view: "Parturiens nempe persona, ex pelvis summa angustia laborans, in nosocomium admittitur, cum magistro" (Prof. Siebold) "medici, in consilium vocati, constituunt de sectione cæsarea dubitari non posse, parturiens motum fœtus se probe sentire asserit, paratis omnibus ad operationem requisitis, cum dolores omnino silerent, & nox esset, translata fuit operatio in diluculum venientis diei, venit Cl. Præses operaturus, & en! eo ipso momento, unico nec valido dolore expellit fœtum—*minutulum, prutredine diffluentem.*"*

Although I agree perfectly with Dr. Osborn, that the volume of the child's head is not determinable with geometrical precision whilst it is in utero, I must beg leave to express my dissent to the following position, that "notwithstanding all these varieties" (in the original construction and compressibility) "notwithstanding the utter impossibility of arriving at absolute precision, *yet we are certainly in possession*

* Compar. p. 53.

of the means of determining with every degree of exactness necessary to direct our future practice in the safest and best manner."† For I do not allow, that the information to be gained by passing the fingers or hand into the uterus, and grasping the head of the fetus, although it may give a tolerable idea to the accoucheur both of its size and compressibility, is sufficient for this purpose, and this mode of inquiry even is inapplicable, when the pelvis is very narrow, and the *os uteri* very much contracted. Much less can I grant that a knowledge of the average size and compressibility of a fetal head is sufficient, upon all occasions, for directing our practice *in the best manner*. To be able to determine the points in question with every requisite exactness is one of the *desiderata* in the practice of Midwifery, which, like the power of regulating the force and frequency of the uterine contractions, will, I fear, never be supplied.*

† Essays p. 192.

* It may be conjectured, when the parents are of small stature, that the fetal head is less than the ordinary size; but very little, if any, dependence is to be placed upon this consideration. It may likewise be supposed, and indeed with some reason, that the head of the child is both smaller and more compressible, when the mother has believed it to

Nevertheless, it is of considerable importance to be acquainted with the mean bulk of the fetal head, and the greatest degree of compression, which it is capable of sustaining, consistently with life, and, therefore, I shall consider this subject with the necessary attention and care.

The opinions of writers on Midwifery are various with respect to these two points. Dr. Osborn says, "By innumerable experiments accurately made, and I know faithfully related, because repeated by myself, the small diameter of a child's head, or that which passes from one parietal bone to the other, measures at birth from $3\frac{1}{2}$ inches to upwards of four inches. One may therefore venture to pronounce that the foetal head, at full maturity, cannot bear compression to a volume *much smaller* than three inches from one parietal bone to the other consistently with safety to the child's life."† And he afterwards says, "I presume that I have now *satisfactorily* proved the necessity and propriety of opening the head of the child, *whenever* the capacity of the pelvis is only $2\frac{3}{4}$ inches, or be dead for some weeks, previously to the commencement of her labour.

† Essays p. 193.

certainly less than three inches, from the utter impossibility of a child of ordinary size at full time, being born alive by any means, either of nature or art through so small a pelvis."† Now

† Essays, p. 223.—Conscious, as it would seem, that he has not proved this point, he says in a subsequent page (p. 446), "*I have endeavoured to prove, that a child at full maturity cannot be born alive by any means of nature, or art, through the natural passage, where the dimensions of the pelvis are not two inches and three quarters from pubis to sacrum.*"——Dr. Bland, speaking of Dr. Osborn's proofs and demonstrations, with great propriety says: "But although this author every where dignifies his arguments *with the title of demonstrations*, yet the reader must take care not to affix to that term any very strict signification, as, in general, it seems, through the course of the essays, to mean no more than a proposition having some degree of probability, or even of possibility. Of this an instance occurs at the beginning of the volume: the author there says, he has demonstrated "the inevitable physical necessity of the tediousness, difficulty, and danger of human parturition, as dependant on the form and structure of the body." Now the reader, unacquainted with the sense, in which the term demonstration is here used, might imagine, that the author had actually proved, that all women must necessarily have tedious, difficult, and dangerous labours; but as this is contrary to what is well known to be the fact, many women having extremely easy and expeditious labours, it is evident he could only mean that women are so constituted and formed, as to be liable, on any accidental derangement, to tedious, difficult, and dangerous labours. And in the same

the Dr. has offered no further proofs than the assumption mentioned above, which certainly does not warrant his conclusion; for it must be evident to every one, that a child, whose head cannot bear compression to a volume *much smaller* than three inches from one parietal bone to the other, consistently with its life, may be born alive through a pelvis *certainly less than three inches*. And what he has advanced here is also contrary to well known facts. Mons. Baudelocque, who has paid great attention to this matter, observes that the transverse or small diameter (which is the one alluded to by Dr. Osborn) is pretty constantly from $3\frac{1}{3}$ inches to $3\frac{1}{2}$, "assez constamment de trois pouces & quatre à six lignes."† Stein makes this diameter generally $3\frac{1}{2}$ inches. "Der kleine durchmesser aber bestimmt den abstand der seitenbeine des kopfes, von einem verbeinerungspuncte derselben

manner many other terms, used by the author, must be modified and softened, of which abundant examples will be found in the course of these pages." Observations on Human and Compar. Partur. Pref. p. 6.

† L' Art des Acc. § 453. The other diameters of the fetal head are given in my Defence, p. 199. It will therefore be unnecessary to repeat them in this place.

bis zum andern, und hält gemeiniglich drey und einen halben zoll."†

Mr. Tomlinson has been so obliging as to measure, with a pair of callipers, the heads of six mature children, born in succession at the Lying-in Hospital, and he found the dimensions from one *bossa parietalis* to the other in the most distant points, to be the following: of the first child $3\frac{4}{8}$ inches; of the second $3\frac{6}{8}$; of the third (which was a twin*) $3\frac{1}{8}$; of the fourth $3\frac{2}{8}$; of the fifth $3\frac{3}{8}$; of the sixth $3\frac{4}{8}$. If we take the mean dimension betwixt $3\frac{2}{8}$ and four inches for the average extent of the transverse diameter of the fetal *cranium*, it will be $3\frac{5}{8}$ inches.

The degree of compression, which the fetal head will bear, without its being destructive of life, must vary very considerably in different individuals, since it depends upon the flexibility of the bones of the *cranium*, and the breadth of the sutures and fontanelles, which are, perhaps, not exactly alike in any two children. When

† Theor. Anleitung &c. § 405.

* The other twin was dead, and removed from the Hospital, before he had an opportunity of examining it.

the form of the head is changed during labour, it is well known, that the oblique diameter is increased in extent, whilst the transverse diameter is proportionally shortened. And in some children the change induced has been so considerable, that the head has been elongated, during a hard labour, eight lines, or more in its oblique diameter, and reduced as much in its transverse diameter,† and yet the functions of

† “ Nous avons reçu des enfans, dont la tête paroissoit avoir perdu *neuf à dix lignes* de son épaisseur, en traversant le détroit supérieur, & sembloit s’être alongée dans les mêmes proportions, non compris le diametre de la tumeur, qui s’etoit formée au cuir chevelu, audevant de la fontanelle postérieure. Celle de plusieurs de ces enfans avoit au-delà de six pouces & demi, même sept pouces de longueur, du menton à la cime de la tumeur dont il agit, pendant quel’ épaisseur, prise d’une protuberance pariétale à l’autre, n’étoit que de deux pouces & demi à trois pouces moins un quart dans les uns, & de trois pouces dans les autres. En bien peu d’heures après la naissance, la tête de ces enfans reprit spontanément l’épaisseur qu’elle avoit perdue dans l’accouchement, & perdit de sa longueur ce qu’elle avoit acquis. Non seulement la tête se déforme ainsi dans quelques cas, mais nous observons encore qu’elle se recourbe selon sa longueur en maniere de croissant, de sorte qu’un de ses côtés est légèrement concave, & l’autre arrondi; sans que cela porte la moindre atteinte à la vie.” Baudelocque. § 1608. And in a note he says, “ M. Solayrés nous fit part un jour, sans des leçons, d’un enfant qu’il avoit

the brain have not appeared to be materially injured, the cavity of the *cranium* being scarcely diminished, notwithstanding this remarkable change in its form. It is clear then from these observations of Baudelocque and Solayrès, that mature children have been born alive, whose heads, in the small diameter, measured $2\frac{1}{2}$ inches only, and, from the observations of several others, that they have been born alive through *pelves*, of which the conjugate diameter measured less than three inches. I cannot therefore assent to Dr. Osborn's opinion, as mentioned above, and must contend, that the practical precept founded upon it is extremely improper, as will be shewn more fully hereafter, when I come to speak of the proper time for perforating the head of the child. I am ready to allow, however, that many of the children, which are obliged to pass through a pelvis,

reçu la veille, dont la tête, au moment de sa sortie, avoit huit pouces moins deux lignes de longueur, mesurée entre les deux premiers points indiqués; tandis qu' elle n avoit conservé que *deux pouces* cinq à six lignes d' épaisseur. Le lendemain de l' accouchement, cette tête jouissoit des dimensions ordinaires." See also Mulder's Hist. Lit. & Critic. Forc. & Vect. Obst. p. 145. & Hamilton's Letters to Osborn.

of which the antero-posterior diameter is under three inches, perish before birth, from injury done to the cranium and brain,† and also to agree with him that the perforator and crotchet are sometimes necessary, when the space from the *symphysis pubis* to the *os sacrum* is greater than three inches.

The opinions of Dr: Osborn, which I have been examining, relate to the largest dimensions of the conjugate diameter of the pelvis, requiring the operation of *embryulcia*. And I shall once more examine his assertions, relative to the “smallest possible dimensions of the pelvis, through which a child with its head opened can certainly be extracted with safety to the mother, by means of the crotchet.”

The foreign accoucheurs, who consider the use of the crotchet as improper during the child's life, recommend the Cesarean section in cases of deformity of the pelvis, in which british practitioners would never think of having recourse to it. Thus for ex. Baudelocque*

† See Baudelocque §. 1609.

* L' Art des Acc. § 1982. And in § 97, He says,

thinks it *perfectly indicated*, whenever the antero-posterior diameter has not more than $2\frac{1}{2}$ inches : And Plenck speaking of hysterotomy says, “ Indicatur hæc operatio 1. Quando *diameter conjugata* in pelvis introitu 3 pollicibus est angustior, & fetus vivus, atque maturus simul deprehenditur. 2. Quando *conjugata superior* pelveos duobus pollicibus est minor, esti fetus adsit mortuus. In hac enim pelvis angustia excerebratio, & extractio fetus maturi impossibilis est. Atque fetus putridus, naturæ relictus, uteri gangrænam, & mortem ut plurimum inducit.*” And I am of opinion, that it still remains to be proved, whether a mature fetus of the ordinary size has ever been extracted, with safety to the mother, through a pelvis, in the superior aperture of which there was not, in any one point from the fore to the hind part, a space *equal* to $1\frac{1}{2}$ inch.

Dr. Kelly has proved satisfactorily, that he has delivered a woman, by means of the scis-

“ Quand le bassin est resserré au point, qu’ il ne lui reste pas deux pouces & demi de petit diamètre, la sortie de l’ enfant à terme ne peut se faire par cette voie.”

* Elem. Art. Obst. p. 22.

sors and crotchet, whose pelvis measured only $2\frac{1}{16}$ inches, in the widest part of the superior aperture from before to behind; because the pelvis was measured after the death of the patient. Of this case, which is related by Dr. Wallace Johnson, in his *System of Midwifery* published in 1769, I shall give an extract; as it establishes Dr. Kelly's claim to the merit of having first suggested the propriety of waiting 24 hours after the perforation of the head of the fetus in cases of extreme deformity of the pelvis, before any attempt be made to extract it, in order that it might descend or settle into the pelvis.

This *Case* occurred in the year 1758. The subject of it was a poor woman, at her full time, in the parish workhouse, and under the care of Mr. Ford, a surgeon in Longlane, Southwark. When Dr. Kelly was first called in, she had been in strong labour five days; the membranes burst soon after the pains came on, and the child's head still remained above the brim of the pelvis, as high as at the beginning of labour. The pelvis was very much distorted, the soft parts were extremely tender, and the head of the child seemed large and firmly ossified. He made a large opening into

the cranium, but not without much difficulty, on account of the head's projecting much over the pubes. When the brain was freely discharged, an anodyne was administered, and, as the pulse of the patient did not shew any signs of immediate danger, he left her for 24 hours, that the head of the child might collapse and descend into the pelvis. When he visited her again, he found, that her pains had been frequent, and that the head was so far advanced into the pelvis, that the jagged edge of one of the parietal bones was pressing against the *perineum* near the *os externum*. The head was extracted by the blunt hook in little more than a quarter of an hour, in a very flattened state. Although the shoulders filled up the passage so completely, that it was difficult to pass the blunt hook to one of the arm-pits, they were brought out in about half an hour; and the hips stuck about half as long as the shoulders. The patient recovered very well, till about the 8th day, when, "having imprudently drank freely of raw porter with some people, who came to see her, she was soon after taken with a violent purging, which carried her off in three days." It is not stated, whether this was her first child. The pelvis, from the figure of its superior aperture, which is given by Johnson, was evidently

distorted from Ricketts. The dimensions were as follow : from the *symphysis pubis* to the *os sacrum* $1\frac{11}{16}$ inch; from before to behind, in the widest part, on the right side, $2\frac{1}{16}$ inches, and, on the left side, $1\frac{1}{2}$ inch : The transverse diameter measured $5\frac{3}{4}$ inches.

Another case of a similar kind occurred to Dr. Kelly in March 1763. The subject of it was very short, and had been so ricketty, as not to be able to walk, till she was nine years of age. The pelvis was so extremely narrow, that Dr. Kelly believed the distance between the *os pubis* and the projection of the *sacrum* to be not more than two inches. He opened the head freely and evacuated it in about 16 hours after he was called to her. He then left it to settle into the pelvis twenty-four hours before he attempted to deliver the woman, which he effected with tolerable ease by means of the blunt hook only. The patient recovered very well. This was her first labour. Dr. Denman, who has published this case from Dr. Kelly's papers, informs us, that he is in possession of the pelvis of this woman, and that in some parts of its superior aperture it does not measure more than $1\frac{1}{4}$ inch.† It is

† Introduction to Midwifery, V. II. p. 204.

to be wished that Dr. Denman had given the dimensions of this pelvis in the *widest* parts from before to behind.

Whoever will take the trouble to read, what Dr. Osborn has written, concerning the effects of *Rachitis* and *Mollities Ossium* upon the bones of the pelvis, in his first Essay (page 17 &c.), will, I think, be convinced, that the Dr. was either totally unacquainted with the distinctive characters of the deformity, induced by the latter of those diseases ; or, at least, had completely lost sight of them. It is owing to this circumstance, in part, I presume, that he has been induced to make the following absurd declaration : “ Whenever there is a space from pubis to sacrum, or from the fore to the hind part of the upper aperture of the pelvis, equal to an inch and a half, I am convinced it will be always practicable to extract a child by a crotchet, after the head has been some time opened ; and the texture of the child’s body is softened by putrefaction (as recommended above), and the whole of the parietal and frontal bones are picked away ; and that—with tolerable facility to the operator, and perfect safety to the patient.”† No unprejudiced man of

† Essays, p. 230.—Dr. Osborn seems to have forgotten,

common understanding, and acquainted with the use of the crotchet, I am persuaded, can say, that he really believes it practicable to deliver a woman with this instrument, whose pelvis is of the same form and dimensions as Elizabeth Thompson's, in which there is a space from the *symphysis pubis* to the *sacrum*, equal to an inch and a half; or whose pelvis has the same form and dimensions as the pelvis of Elizabeth Redman, in which there is a space from *pubes* to *sacrum* equal to $2\frac{3}{16}$ inches. See Defence, P. 183, and Pl. I.

Dr. Osborn has asserted, that he has extracted

in this place, that he has attempted to "demonstrate the inevitable and physical necessity of the tediousness, the difficulty, and the dangers of human parturition, as dependent on the peculiar form and position of our body;" Pref. p. 1.; and that he has "clearly demonstrated, that the extraordinary difficulty and tediousness of human parturition are inevitable; even under the most favourable concurrence of circumstances, because they depend on the peculiar form, structure, and position of the human body." Page 25: otherwise he would not surely have intimated, that a natural labour is tedious, difficult, and dangerous, and his crotchet-cases (some of which I shall prove hereafter cannot be managed with the crotchet) tolerably easy, and perfectly safe.

"Spectatum admissi risum teneatis, amici?"

a child, which appeared to be a moderate-sized one, with the crotchet through a pelvis, the superior aperture of which, *in the widest part* from before to behind, was only $1\frac{3}{4}$ inch. And Dr. Clarke asserts, that Dr. Osborn delivered a woman, named Ann Cooper, by the crotchet, although it appeared to himself and Dr. Osborn, "that the diameter from the *os pubis* to the *os sacrum* hardly, if at all, exceeded one inch and a half."* Dr. Clarke also asserts, that he has delivered a Mrs. West, whose pelvis, in the opinion of himself and Dr. Osborn, was less than $1\frac{1}{2}$ inch from the *os pubis* to the upper part of the *os sacrum*.** But Dr. Clarke's account of these two cases is defective in two very material circumstances ; he has neither mentioned the size of the child's head, nor the dimensions of the pelvis on each side of the projection of the *os sacrum*. Dr. Clarke, in his second letter to you, from which you have printed an extract, says that *he* has extracted the head of a child by the crotchet, "*in one inch and a quarter from the pubis to the sacrum,*" and Dr. Osborn, in one instance, where there

* Essays p. 226. ** Ibid. p. 265.

was only $\frac{3}{4}$ of an inch,"† alluding, I presume, to the case of Eliz. Sherwood.

Now we have been told by Dr. Osborn, that Sherwood's pelvis measured an inch more from before to behind on the right side than at the *symphysis pubis*. And, as Dr. Clarke has chosen to mention the narrowest, and to conceal the widest dimension from the fore to the hind part of the superior aperture of Sherwood's pelvis, it will, I apprehend, be fair to infer that he has done the same, with respect to the other three cases, related by himself. Taking Dr. Clarke's cases in this point of view, I can believe them to be authentic; because, if we add *only one inch more*, as in Sherwood's case, to the distance from *pubis* to *sacrum*, in each of the three cases in question, in order to determine the *widest* space in any part of these pelves from before to behind; Cooper's pelvis may be supposed to have measured $2\frac{3}{4}$ inches; West's rather less than $2\frac{1}{2}$ inches, and the woman's, whose name is not given, $2\frac{1}{4}$ inches, in the widest part. And, if the *pelves* of these three women were of an irregular kind, like that, which is figured in Plate VI, there may be a difference of more

† Detection, p. 86.

than one inch between the *revealed* and the *concealed* distances from the *os pubis* to the *os sacrum*. If Dr. Clarke intend to assert, that either himself, or Dr. Osborn, has delivered a living woman of a moderate-sized child, by means of the crotchet, whose pelvis, in the widest part of the superior aperture from before to behind, measured only $\frac{3}{4}$, or $1\frac{1}{2}$ inch, I must take the liberty to reply *Credat qui vult*.

I have already intimated to you, that I believe Dr. Osborn's account of Sherwood's case to be incorrect, and that he was either deceived in taking the dimensions of her pelvis; or that her child was immature† or of small size; or that both these circumstances concurred: And I will now explain to you what further grounds I have for contending, that her delivery by the crotchet, as stated by Dr. Osborn, was utterly impracticable. These are the result of some experiments, which I have made, with the assistance of Messrs. Wood, Tomlinson, Boutflower, Hargreaves, &c. with the view of determining the lowest dimensions of a pelvis,

† An account of the dimensions of the heads of two children born in the end of the 7th, and beginning of the 9th month will be given hereafter.

through which it is possible to extract a fetus of the ordinary size by the perforator and crotchet.

I got a frame of a convenient breadth and height made of wood, and procured several boards, one inch in thickness, in each of which there were two or more apertures cut. Most of these holes corresponded, both in form and size, with the superior apertures of real distorted pelves. The boards, for the sake of perspicuity, I shall distinguish as No. 1. 2. 3 &c.

In No. 1. were made three apertures; the first similar to the superior aperture of the pelvis of E. Thompson; the second similar to that of I. Redman; and the third similar to that of E. Hutchinson: All of which were distorted in consequence of *Malacosteon*, and are described and figured in these *Letters*.

In No. 2. three apertures were cut; the first corresponding to the superior aperture of the pelvis of E. Sherwood, as described by Dr. Osborn; the second corresponding to that of Martha Rhodes; and the third to that of Ann Lee. These three pelves were all distorted in

infancy by Ricketts; and their apertures are both described and figured in these *Letters*.

In No. 3. two apertures only were made; the first $1\frac{1}{2}$ inch in breadth from one end to the other, the sides being straight and parallel lines, and four inches in length; the second corresponding exactly to the superior aperture of the pelvis, figured in Plate VI of this work.

In No. 4. three apertures were made; the first of the size and form of the fetal cranium, described in my former letter, and figured in Plate V.; the second four inches in length, and exactly two inches in width throughout its whole extent, the sides being straight lines; and the third of the same length as the second, but only $1\frac{3}{4}$ inch in width from one end to the other, and the sides being straight lines.

I afterwards procured a fetus of moderate size, which had been brought into the world by the perforator and crotchet, through a pelvis, very much contracted in consequence of *mala-costeon*. Its head had been necessarily very much reduced, in order to accomplish the delivery, and I diminished it still further by cutting and breaking away the whole of the parietal bones,

and that part of the frontal bones, which remained elevated above the base of the cranium; I also bent the os occipitis, a little behind the *foramen magnum* (because I know this may be easily done in delivering with the crotchet), so that it would either lie back upon the neck, or forwards upon the base of the cranium.† When thus reduced, this fetus weighed five pounds and one ounce: It measured from the toes to the base of the skull seventeen inches, from the chin to the top of the nose, when very strongly compressed by the callipers $1\frac{1}{2}$ inch (See Pl. XII. f. 1. A B), and nearly $\frac{1}{4}$

† I apprehend that much difficulty will not be experienced in breaking off entirely, and removing the circular portion of the os occipitis of a fetus, by means of the crotchet, after the parietal bones are extracted, especially if this instrument be applied externally; for, in some instances, the circular part of this bone is only connected by a membrane with the sphenoid process at birth, and, in other instances, there is only a slight bony union betwixt it and the posterior points of the two condyles; so that if the point of the crotchet be introduced just behind the *foramen magnum*, a slight degree of force will be sufficient to overcome the slender connection, subsisting between these two parts of os occipitis, which afterwards so firmly coalesce into one bone, as to leave no trace of their having been formerly distinct ossifications. See Defence of the Cesarean Operation &c. Plate IV.

of an inch more from the chin to a line drawn from the top of one orbit to the other; from the external canthus of one orbit to that of the other $2\frac{3}{4}$ inches (See Pl. XII. f. 1. C D), and the same nearly from one zygomatic arch to the other; from the top of the nose to the posterior part of the condyles of the *os occipitis* $3\frac{1}{4}$ inches.†

† The dimensions of the heads of ten children, born in the Lying-in Hospital, were taken by Mr. Tomlinson, and found as under: The first six are the children mentioned above in page 387: The 11th and 12th are two children, which have lately occurred in my own private practice.

	From the chin to a line drawn from orbit to orbit.		From one zygomatic arch to the other.		From one mastoid process to the other.	
	Inches	Eighths	Inches	Eighths	Inches	Eighths
1	2	: 3	3	: 0	2	: 7
2	2	: 1	3	: 1	3	: 2
3	1	: 6 (a Twin)	2	: 4	2	: 6
4	2	: 2	2	: 7	2	: 6
5	1	: 7	2	: 6	2	: 6
6	2	: 0	2	: 7	2	: 6
7	2	: 5	3	: 2	3	: 0
8	2	: 3	2	: 7	2	: 4
9	2	: 3	2	: 6	2	: 4
10	2	: 2	3	: 0	3	: 0
11	2	: 0	3	: 0	3	: 0
12	2	: 3	3	: 0	2	: 6

The 12th was a large fetus: The *oblique* diameter of the head, taken from the chin to the posterior extremity of the sagittal suture, measured $5\frac{1}{2}$ inches: The *longitudinal* diameter, from the forehead to the top of the *os occipitis*, mea-

When these different dimensions are attentively considered, it will appear to every one, that the most favourable position, in which the head so reduced can be applied to a small aperture, with the view of dragging it through with a crotchet, is endwise, with the chin to the *os sacrum*, and the top of the nose to the *os pubis* as is represented in Pl. XII. fig. 1.; or with the chin to the *os pubis*, and the top of the nose to

sured $4\frac{1}{2}$ inches: And the *transverse* diameter, from one *bossa parietalis* to the other, $3\frac{3}{4}$ inches. The *large* circumference, passing round the two extremities of the oblique diameter, and over the *ossa temporum*, measured 15 inches: The *middle* circumference, which passes round the extremities of the longitudinal diameter, and over the parietal bones, $13\frac{1}{2}$ inches: And the *small* circumference, passing obliquely round the top of the forehead, and the base of the skull immediately behind the foramen magnum, 12 inches. Baudelocque takes the *large* circumference over the two fontanelles, the face, chin, foramen magnum and tubercle of the *occiput*: But as this circumference cannot be known, till the head is separated from the body, I have chosen to take it differently, and I find there is only about half an inch difference, the circumference taken by Baudelocque being so much larger. This author takes the *small* circumference over the middle of the base, and of the top of the head; but in a living child it is more easily taken in the way, which I have adopted, and there is scarcely any difference in the circumference taken in these two ways. See Baudelocque § 454.

the *sacrum*, the *occiput* being applied close to the neck ; and neither turned endwise with the *occiput* foremost, because in this case the volume of the face must be added to that of the neck ; nor turned side-ways, as Dr. Osborn states, that he placed it in the case of Eliz. Sherwood.

Having taken these preparatory steps, I commenced my experiments, which I shall divide into four series.

First Series of Experiments.

I screwed the board, No. I, across the top of the frame ; then, having placed my feet upon the bottom of the frame, and my knees against the sides, in order to keep it steady, I introduced the crotchet through the first aperture, and fixed the point of it in the right side of the *sella turcica*, as I could get a better purchase there than in the *foramen magnum* ;† the child was placed upon a stool of convenient height on the other side, and its head being placed edge-ways, as is recommended by Dr. Osborn, I

† It is not an easy matter to obtain a firm purchase by introducing either the crotchet or blunt hook into the *foramen magnum*.

attempted with my whole strength to bring it through, but without effect; I introduced the crotchet afterwards through the second and third apertures, and, having obtained the same firm hold, I endeavoured, but to no purpose, to extract it through them. I then tried to bring the head endwise through these three different apertures in succession, having first fixed the point of the crotchet firmly in the posterior part of the *sella turcica*, but I was not able to pull it through.

The Second Series of Experiments.

Having fixed the board, No. 2, across the frame in the same way as the former, I attempted to pull the head through the three apertures successively, first applied edgewise, and afterwards endwise; but I was not able to bring it through any of them. The situation of the head, when applied endwise to the first aperture which has the dimensions of the superior aperture of Sherwood's pelvis, as stated by Dr. Osborn, will be seen in Plate XII. fig. 1.; where the widest part, or right side of this aperture is shewn by the dotted line E F.

The Third Series of Experiments.

After screwing the board, No. 3, across the frame, and fixing the crotchet as before in the *sella turcica*, I tried to bring the head through the first aperture, first placing it edgewise and then endwise; but I could not succeed. I then attempted to bring it endwise through the second aperture, and succeeded after pulling pretty forcibly for some time, the base being turned to the pubes, and the chin to the sacrum, and *vice versa*. The chin in these experiments was pressed to prevent the mouth from opening, and the lower jaw from catching upon the top of the *sacrum*, or *pubis*, a precaution, which was observed in all the experiments. On attempting afterwards to bring the head through this aperture edgewise, with the inside of the base of the cranium first turned to the *pubes*, and afterwards turned to the *sacrum*, we found that it could not be brought through, till the head was turned more or less endwise, the neck remaining insuperably fixed in the former case against the protuberance of the *os sacrum*, and in the latter case against the *ossa pubis*, till the face descended into the tube of the pelvis. I afterwards applied the crotchet on the outside of the head under the *maxilla in-*

ferior, obtained a firm purchase, and pulled the head endwise through this aperture with as little difficulty, as when it was applied on the inside of the base of the skull. The body of the child, though not in the least putrid, was sufficiently compressible to be brought through this aperture with tolerable ease (both with the head foremost, and with the feet foremost), without opening either the *thorax* or *abdomen*.

The Fourth Series of Experiments.

I screwed the board, No. 4, across my frame as in the former experiments, and without much difficulty brought the head endwise through the first aperture. I then attempted to bring it through the second aperture, and succeeded. And I afterwards succeeded in bringing it through the third aperture, but not without considerable difficulty, the base of the cranium being now very much broken, the orbital processes of the *os frontis* being pressed quite flat, and in part torn away. I afterwards pulled the body of the child through the first and second apertures, without opening either the cavity of the *thorax* or *abdomen*.

It will be readily granted, I presume, that this fetal head could not have been broken and

reduced so much as it was in these experiments, without great difficulty and danger, whilst it remained in the *uterus* of a living woman with a very distorted pelvis. It will not, I think, be denied, that it is more practicable and easy to bring the reduced fetal head through an aperture in a one-inch board than through the cavity or tube of a living female's pelvis, of which the superior aperture has no larger dimensions, when the *uterus*, *vagina*, *rectum*, and bladder are removed. It will also be granted, I presume, that the fetal head, when turned endwise with the face foremost, will pass through a smaller aperture than when turned edgewise, or in any other possible direction, whilst it is connected with the trunk. And these premises being granted, the following conclusions may be drawn, 1st. that *it is not possible to extract a mature, moderate-sized child, (or a child of the size used in these experiments) through a pelvis having the dimensions of Elizabeth Sherwood's, as stated by Dr. Osborn, without inevitably destroying the woman.*†

† I am ready to allow, that a fetus may be cut and broken to pieces, by means of the scissars and crotchet, till it may be made to pass through an aperture no larger than the neck of a common quart-bottle, or a finger-ring; but I contend, that this cannot be done in the *uterus* of a female, without infallibly destroying her.

2ndly. that, *when there is a space from pubis to sacrum, or from the fore to the hind part of the superior aperture of the pelvis, equal to an inch and a half, it will not always be practicable to extract a child by a crotchet, after the head has been some time opened, and the texture of the child's body is softened by putrefaction, and the whole of the parietal and frontal bones are picked away; much less, that it can be done with tolerable facility to the operator, and perfect safety to the patient.*

II. *Of the circumstances necessary to be attended to, with respect to the performance of the operation.*

The operation of Embryulcia may be properly divided into two parts, or stages; more especially as some time is, in almost every case, allowed to elapse betwixt the perforation and evacuation of the *cranium*, which constitute the first; and the extraction of the child, which constitutes the second stage, or part.

The opinions and practical precepts of Dr. Osborn, relating to both stages of this operation, are confessedly original, and I have no doubt of being able to prove, that they are all extremely

injurious, and some of them at variance with his own practice.

1. He has repeatedly insisted upon the immediate use of the perforator, as particularly requiring our attention towards insuring the safety, and success of the operation, as will appear from the two following quotations ; and others to the same purport might be adduced : " When the necessity of this practice is established, by the acknowledged dimensions of the pelvis, as *previously ascertained in a former part of this Essay* : then, in all the different stages of deformity, absolutely requiring the child's head to be lessened, *great inconveniences, without a possibility of benefit, may happen from procrastination, while infinite advantage will ensue from the early commencement of the operation.*"†——" The lamentable necessity of such violent means being established, I have endeavoured to prove the utility of opening the child's head *as early as possible*, and of delaying the subsequent delivery at least 30 hours, in order to induce putrefaction, and thus facilitate, and render more safe, the future extraction by the crotchet ; and by attention to these circumstances, I have asserted,

† Essays, p. 221.

*and experience confirms my assertion, that delivery by the crotchet may always be effected with perfect safety to the mother."**

From comparing these with other passages in Dr. Osborn's Essays, it is clearly recommended by him to perforate the *cranium* of the fetus in the very commencement of labour, when the superior aperture of the pelvis of the patient measures from *pubis* to *sacrum* in any part from before to behind, only $2\frac{3}{4}$ inches, or certainly less than three inches.† Now I have shewn in a preceding part of this letter, that, in a great number of instances, children have been born alive, when the dimensions of the pelvis were smaller than those stated by Dr. Osborn, as invariably requiring embryulcia; and I have little doubt that most accoucheurs, who have been long engaged in extensive practice, can add one or more cases, of a similar nature, to those that are already recorded. I must therefore insist upon it, that, if Dr. Osborn's practical direction had been universally adopted, all these fetuses must have been destroyed; and, that, if it should ever be gene-

* Essays, p. 449. See also p. 451. and 454. † See above p. 384.

rally followed, many children will hereafter be inevitably destroyed by the rash and precipitate use of the perforator, which, by relying upon the powers of nature solely in some cases, and aided by the lever or forceps in others, may be saved. Consequently, this rule is extremely improper. Moreover the difficulty and danger, attending *the first part* of the operation, will, in every instance, be greater, if this direction be attended to, as will be more fully explained hereafter.

2. When the head of the fetus is opened in the beginning of labour, he lays it down as a rule, that no attempt should be made to extract it, until after a lapse of at least 30 hours. This is shewn in a preceding quotation, and will appear also with an additional assertion (which I think it necessary to examine) in the following passage: "That the young practitioner may be directed in all circumstances, which admit and require precision, I would recommend the delaying all attempts to extract the child, till the head has been opened at least 30 hours: *a period of time sufficient to complete the putrefaction of the child's body.*"

† Essays p. 233.

The time, which ought to be suffered to elapse, after the perforation and evacuation of the fetal *cranium*, before we proceed to the extraction of the child, should be different according to the circumstances of each particular case. In some instances we may, with advantage, proceed almost immediately to extract; in others we may wait from one to 24 hours, with propriety, in order that the head may be compressed, and forced into the pelvis; but not with the expectation, that putrefaction will take place.

The propriety of waiting 24 hours betwixt the first and second stages of the operation, that the bones of the *cranium* may collapse, and descend into the pelvis, when very much contracted, was first made public, if not suggested by Dr. Kelly. In the year 1758, about 18 years prior to the case of Elizabeth Sherwood, he adopted this mode of practice in delivering a poor woman, of whose case an abstract is given above, in page 392, from Johnson's Midwifery; a valuable book, which was published seven years before Dr. Osborn delivered E. Sherwood, and which, I presume, Dr. Osborn had then never read, otherwise the two following passages surely would not have appeared in the Postscript to his Essays, published in 1792. "Nor ought I to pass over

unnoticed his" (Dr. Denman's) "belief, that the practice of opening the child's head, *long before the final delivery*, originated with Dr. Kelly."†—"Neither did Dr. Denman, or any other person in consultation then" (in the case of E. Sherwood) "or indeed till long after the Essay was printed, and many years after the case had happened, *ever give a hint*, that *Dr. Kelly had done the same thing*: it was considered as an experiment. I should have been extremely happy to have known, that it was not a mere experiment, but that I had had such good authority to justify the practice, or such a good precedent to expect success; and I sincerely hope, since all Dr. Kelly's papers have fallen into such good hands as Mr. Croft's, Dr. Denman's son-in-law, this discovery will not be the only advantage that the public or the profession will derive from Dr. Kelly's abilities and experience."* It will be recollected that a second case has been given, from the papers of Dr. Kelly, in confirmation of the propriety of waiting 24 hours for the head to settle, when the pelvis is much contracted.‡ It appears, however, Dr. Osborn is still of opinion, that he has improved upon Dr. Kelly's practice, by deferring the ex-

† Essays p. 453. * Essays p. 454. ‡ See above p. 394.

traction of the head at least 30 hours, with the expectation of inducing putrefaction, and thereby facilitating the extraction of the child.

The time, at which putrefaction will commence and be completed in the body of a *fetus in utero*, that has been killed by the crotchet, will undoubtedly be different in different cases; and, therefore, no precise time can be stated for the commencement, or completion of this process. Dr. Osborn has, nevertheless, ventured to assert in a passage, which I have just quoted, that 30 hours are *a period of time sufficient to complete the putrefaction of the child's body*. This I did not believe; but, having never allowed 30 hours to elapse, in any case where I have performed embryulcia myself, between the first and second stages, I was induced to ask one of Dr. Osborn's pupils, in what state he had found the fetus after so long a delay; and he mentioned a case, in which the child appeared as fresh as if it were but just dead. Hence it is evident, that after waiting 30 hours, whatever advantages we may gain in other respects, we shall, at least in some instances, derive none from the putrefaction of the child. Let us now suppose, as is very probable, that in some cases a degree of putrefaction does take place in 30 hours after

the fetus has been destroyed by the perforator. As we know that the *abdomen* and *thorax* become very much tumefied during the first stage of the putrefactive process, and add very much to the difficulty of extracting the body of the child;† it is very likely, that the putrefaction induced may prove actually disadvantageous. Further, I am decidedly of opinion, that putrefaction never has, nor ever will take place, in 36 hours after the death of the *fetus in utero*, in the degree that Dr. Osborn has stated with respect to the child of Eliz. Sherwood's. From Dr. Osborn's own account of the case, it appears that the gentlemen, who were consulted upon this occasion, "were rather disposed to believe that the child was dead;" indeed this was the reason why the Cæsarean operation not was performed: And the Dr. informs us, that the perforation of the head was had recourse to at eleven in the evening, and that "During the whole day" (the day following) "the pains were neither so strong, nor so frequent, as they had been; her pulse was extremely quick, but tolerably strong, the discharge from the *vagina* was very considerable in quantity, and most abominably *fætid*."* I here appeal to any one, who has witnessed the progress of

† See above, in page 258.

* Essays p. 247.

putrefaction in the human body, whether there be not the strongest reason for believing, that it had commenced in this child, previously to the perforation of its head? If this be conceded, then it will follow that any advantages, (real or supposed,) derived from the degree of putrefaction, that had taken place in Sherwood's child, can not reasonably be expected from waiting 36 hours after opening the head of a living fetus. Moreover, it may fairly be questioned, whether Dr. Osborn did really derive any material advantage from the putrefaction of Sherwood's child in performing the delivery. The greatest difficulty, experienced in the operation of embryulcia, is, doubtless, in the extraction of the base of the fetal *cranium*, and I have Dr. Osborn's authority for saying, that the base of Sherwood's child's *cranium* was not more easily broken or rendered more compressible,† and easy of extraction, on account of the putridity of the body. He could not break the base of the *cranium* with the crotchet, nor could he extract it, till it was turned a little edgeways. He could not even extract the trunk, untill he had opened both the *thorax* and *abdomen*; and I will venture to pronounce, that, wherever the base of a fetal *cranium* has been

† Essays p. 253.

brought through the tube or cavity of the pelvis, the body will generally follow without opening the *thorax* or *abdomen*, and always after these cavities are opened, even if it be not at all putrefied. It appears probable then, if putrefaction should take place, in consequence of our waiting 30 hours after the perforation and evacuation of the head of a living fetus, that, by adding to the volume of the child, it may render the extraction of it more difficult; and it is evident that, if it proceed (which cannot reasonably be expected) to the degree observed in Sherwood's child, it will not assist us in overcoming the greatest difficulty, the *difficulty of extracting the base of the cranium*.

When the circumstances of the case will admit of it, to delay the extraction of the child 6, 12, or 24 hours, in expectation of the head's becoming compressed, and being forced lower into the cavity or tube of the pelvis by the labour pains, is rational and proper; and when the head has descended so low as to be easily taken hold of by the fingers, blunt hook, or crotchet, the attempt to extract it should not be deferred any longer. No accoucheur can always with certainty say, previously to the extraction of the child, whether the putrefactive process has taken place

in it or not, when he has waited 30 hours after perforating and evacuating the cranium; or, if putrefaction have commenced, whether it may not add to the difficulty of the delivery by increasing the volume of the fetal trunk. If, in the course of 6, 12, or 24 hours, the head should be forced down so low, as to press upon the *perinæum*, or as to be easily taken hold of and extracted, would Dr. Osborn think it necessary, or proper, in every case, to wait 6, 18, or 24 hours longer, in order that putrefaction may take place in the body of the child, and render it more compressible? The practice of himself, and his colleague Dr. Clarke may be adduced to shew that neither of them would. Why then does Dr. Osborn insist upon the propriety of a precept, which he neglects in his own practice? Ann Cooper began to be in labour on July 19, 1785, about 5. p. m. Dr. Osborn opened the child's head soon after 3 p. m. the next day. "She was then left during the night, *that putrefaction might begin, and the bones collapse.* Towards the morning her pains became violent, accompanied with some hysterical spasms; therefore Dr. Osborn, having picked away great part of the parietal bones with the crotchet, which was by this time practicable, delivered her of the remainder of the head at seven in the morning.

The body followed with tolerable ease."† Here is an evident departure, on the part of Dr. Osborn, from his own precept; he left his patient that the child might putrefy; but, finding that he could deliver her before this process could reasonably be expected to have taken place, he very properly only waited 16 hours.—Mrs. West was seized with regular pains on Wednesday, Nov. 2, 1785. On Saturday (the 5th) at 11. p. m. Drs. Clarke and Osborn met in consultation upon her case; and soon afterwards Dr. Clarke perforated and evacuated the *cranium*, as well as he could. He was called to her at six a. m. the next day (viz. Nov. 6th), her pains being strong and frequent. Part of the head was now beginning to enter the superior aperture of the pelvis, he, therefore, immediately proceeded to extract it, and, having accomplished this, "The body, as it allowed of more compression, came away comparatively with ease."* In this instance, we find that Dr. Clarke waited only seven hours, after the perforation and evacuation of the *cranium* (instead of 30, the period recommended by Dr. Osborn);

† See Dr. Clarke's account of this case in Osborn's Essays p. 258 &c. *See Dr. Clarke's account of this case in Osborn's Essays p. 262 &c.

and yet the trunk of the child, although it is not stated to have been putrid, was extracted comparatively with ease.——Eliz. Sherwood had been in labour about four days, when the head of her fetus was perforated by Dr. Osborn, and he waited 36 hours, before he attempted to extract the child. It is evinced from these three cases, which are adduced in confirmation of the propriety of Dr. Osborn's practical precepts, that Drs. Clarke and Osborn did not, in any one of the cases, act in conformity to them. In no one instance was the head opened in the very beginning of labour, or as soon as possible after labour commenced: And in *two* instances out of the three they did not wait 30 hours, for the putrefaction of the child: but delivered the women, as soon as the heads of the children could be conveniently taken hold of by the crotchet, or blunt hook.

3. When the pelvis is so much contracted, that the base of the fetal *cranium* cannot be brought through the superior aperture flatwise, or with one side to the forepart, and the other to the back part of the pelvis, and with one end turned to one side, and the other to the other side of the pelvis, it becomes necessary to attempt to change the position of the base of the skull. Dr.

Osborn, speaking upon this point, says "The last circumstance which I consider as of much importance towards facilitating the final extraction of the head (although disregarded by Dr. Denman) is, when the basis of the cranium lies flat over the brim of the pelvis, to contrive to change the position, and to turn it sideways; by which the volume of the remaining part of the head, as it relates to the form of the brim, is considerably lessened, and the resistance more readily overcome. This effect must be so obvious and self-evident, that it cannot require either proof or illustration: otherwise Hippocrates affords, on a similar occasion, a very apt comparison, in the difference of the manner in which the olive presents at the mouth of the bottle; where if lying across, it can never enter, but *lengthways, with its extremity first*, there is no difficulty: or, to use a more obvious, familiar, and striking comparison, the basis of the cranium, in a very contracted pelvis, lies flat over the brim, as the piece of money over the till in the counter, in which position neither time nor force can make it enter, and yet the slightest and most obvious art by turning it edgeways, will remove the difficulty in an instant."†

† Essays p. 458.

By the experiments, related above, I have ascertained that comparatively little advantage can be gained by turning the base of the reduced fetal cranium exactly edgewise, when the pelvis is *extremely* distorted; whilst a very material one may be obtained by turning it less or more endwise, with the face foremost. And it seems very surprizing to me, that Dr. Osborn should not have discovered the superior advantage, derivable from this position of the base of the fetal head. It gives me great reason to conclude, that he has never made any experiments of a similar nature to mine, and has proceeded to draw his conclusions from the admeasurement of the depth and width of the reduced *cranium*, without either attending to the length of its base, or to the resistance given by the neck of the fetus. It is no wonder, therefore, that he should have fallen into a most egregious error. Hippocrates does not say, that any advantage will be gained by turning an olive *sideways*, when it lies flat across the neck of the bottle; but by turning it *endwise*. And the Drs. second illustration is equally inapplicable, unless we both suppose the head to be severed from the neck of the child, and the breadth of the aperture, *throughout an extent, equal to the length of the base of the child's skull*, to be somewhat greater than the thickness of the reduced head—two circumstan-

ces, which did not take place in the delivery of Elizabeth Sherwood, according to Dr. Osborn's own statement. The impossibility of Sherwood's delivery, as stated by Dr. Osborn, is clearly demonstrated in my first letter to you (p. 203 &c); and therefore it is unnecessary to repeat the demonstration in this place.

4. Another circumstance, meriting particular attention, is the most proper mode of applying the crotchet. Dr. Osborn is persuaded, that it is of great moment, that the crotchet "be invariably applied within the head, *and that the external application can never be either necessary or safe*, but that it must *in all cases* be unquestionably more dangerous, and less efficacious: besides, in a very deformed and contracted pelvis, even the bulk of the instrument, so applied, will be a considerable addition to the volume of the fetal cranium."

The last objection, relative to the space occupied by the crotchet, applies equally to the *internal* application of it, when, on account of great deformity of the pelvis, it is necessary that the base of the fetal head be turned completely

† Essays p. 457.

edgewise, or endwise; and, in other cases, the thickness of the instrument is not of so much moment. Most practitioners and writers on midwifery recommend the occasional application of the crotchet on the outside of the *cranium*: And I know from actual experience, that the external application of this instrument is proper and necessary; and that it is not, *in all cases*, more dangerous and less efficacious, as will appear from the following case.—Mr. Abraham Chew, a Surgeon at Blackburn, was called to a woman, at Ramsgreave in that neighbourhood, who had been repeatedly delivered by the crotchet, and whose pelvis was very much contracted, especially on the left side. As there seemed no probability of deriving advantage from deferring the first stage of the operation, he opened the head of the child soon after his arrival, and removed a great part of the brain. He waited several hours, that the head might collapse, and descend into the pelvis. When it was forced pretty low by the uterine contractions, he very judiciously applied the crotchet on the inside of the *cranium*, and attempted to extract the child. He pulled away a great part of the frontal and parietal bones, but not being able to bring down the base of the *cranium*, although he had pulled in the most proper direction, and exerted very

great force, I was called to his assistance, when he had attended about 24 hours. On examining the woman, I found the right side of the pelvis tolerably capacious; but the left side of the pelvis was too much contracted† to admit any material part of the child's head to pass through it; and I found so great a part of the bones, composing the upper part of the skull, pulled away, that I did not think it necessary to attempt any further reduction of the head. It appeared to me, that the best mode of proceeding, in the extraction of this child, was to bring down the face of the child, which was turned towards the left side of the pelvis. The most easy and obvious way of doing this was to apply the crotchet on the outside, and, as the orbits were more easily accessible than either the mouth or chin of the child, I fixed it in the left orbit, and succeeded easily in bringing down the face with one side to the forepart, and the other to the back part of the pelvis; and by pulling the head towards the right side of the pelvis, I extracted the child without using so much force as had been before fruitlessly exerted by Mr. A. Chew. This woman, after her former labours, had suffered

† I am of opinion that this pelvis is distorted from *exostosis*.

much from *ischuria vesicalis*, which rendered the use of the catheter necessary for many days ; but after this labour, she had no return of this troublesome complaint, and recovered very quickly and completely.

Dr. Osborn, in his account of the case of E. Sherwood, informs us, that he fixed the crotchet in the great *foramen*, and then introducing the two fingers of his left hand, he endeavoured with them to raise one side of the forepart of the head, and turn it *a little edgeways*, and adds, "Immediately and easily succeeding in this attempt, the two great objects were at once accomplished : for the position was changed *and the volume diminished.*"† It is by no means easy in practice to get possession of a firm purchase with either the blunt hook, or crotchet in the *foramen magnum*, as I have already intimated ; nor do I conceive, when this is obtained, that it will, in general, be easy to turn the child's head completely edgewise, or endwise with the fingers. We may, indeed, expect, without any attempt on our part to produce this effect, that the head will be turned a little edgeways in many instances, owing to the inclination of the superior aperture of the pelvis,

† Essays p. 255.

because we seldom pull, with the crotchet, exactly in a line corresponding with the axis of the superior aperture of the pelvis. But if we apply the crotchet on the outside, especially under the lower jaw, we shall find it more easy to obtain a firm purchase, and to turn the head edgeways, or more or less endwise. And, having effected this, we may either continue the application of the crotchet externally, or we may afterwards fix it in the *sella turcica*, if we can obtain a better hold there. The efficacy and safety of the application of the crotchet do not, in my opinion, depend so much upon its being fixed on the inside of the *cranium*, as upon our fixing it properly, pulling carefully, and, at the same time, keeping the fingers of one hand opposite to the point of the instrument; that, if it should slip unexpectedly, the danger of wounding the *vagina*, *rectum* &c. of the mother may be obviated. I am of opinion, that, in general, the crotchet should be applied on the inside of the *cranium*, but that, upon many occasions, it may with more ease and advantage be applied on the outside.

Speaking of the 29th Chapter of the 7th book of Celsus, which relates to the extraction of the dead fetus, Dr. Osborn makes use of the follow-

ing words: "For although nearly two thousand years have elapsed since Celsus lived at Rome, *there is not perhaps a better dissertation extant on this subject*, either in point of composition, or *matter.*"† The inconsistencies of this author are astonishingly numerous, and glaring. In page 235. he finds fault with Dr. Hamilton, for recommending the crotchet to be applied "somewhere on the outside of the *cranium*," and in p. 456. he blames Dr. Denman for thus expressing himself: "Some have thought, that it was of great importance to fix the crotchet on the outside of the head, and others have insisted on the propriety and superior advantage of fixing it on the inside; but *I am persuaded* such things are of little consequence, and that, in the course of a difficult operation, it may be found necessary and useful to fix it in either way." And yet his favourite Celsus never applied, or recommended it to be applied *on the inside* of the *cranium*. "Tum si caput," says this elegant writer, "proximum est, demitti debet uncus, undique lævis, acuminis brevis, qui vel *oculo*, vel *auri*, interdum etiam *fronti* recte injicitur: deinde attractus infantem educit." Celsus also speaks of the danger, arising from the tumefaction of the

† Essays p. 238.

body of the child in the following words : “ Nam si corpus jam intumuit, neque demitti manus, neque educi infans, nisi ægerrime potest; sequiturque sæpe cum vomitu, & cum tremore mortifera nervorum distentio.” He observes further, that there is great danger of the crotchet’s slipping when the body of the child is putrid : “ nam uncus injectus *putri* corpusculo facile elabitur, in quo quid periculi sit supra positum.” The legitimate inference, therefore, to be drawn from Dr. Osborn’s panegyric of the *matter* of this chapter of Celsus is clearly this, that his own directions for the use of the crotchet are improper; whilst those, given by Drs. Hamilton and Denman, are excellent; otherwise, to apply the *argumentum ad hominem* in the words of the inimitable Le Sage, “ *sur ce pied-la Celse a grand tort.*”†

Having pointed out the impropriety of Dr. Osborn’s directions, relative to the management of difficult labours, arising simply from extreme deformity of the pelvis, you may, perhaps, expect, that I should offer in lieu of them others, that are less objectionable : And, being desirous of intermixing instruction with correction, I

† Histoire de Gil Blas T. 1. Liv. 2. Ch. 4.

shall attempt to satisfy your expectations in the best manner I am able.

Dr. Osborn says, "The use of practical books upon any subject is to supply from the writer's experience *positive rules* of conduct to the young practitioner."† And he adds, "If Dr. Denman's experience does not enable him to lay down any positive rule of conduct, either from the calculations, or otherwise, than what will result from the reflections of common sense, working in a reasonable mind: it is in other words directly telling his readers *that they may act as they please*; for every person flatters himself that he possesses common sense, and every person believes his own mind to be a reasonable mind."††

† Essays p. 461. †† Ibid. p. 462:—Dr. Denman in his Chapter on the Cesarean Operation, has said, "After a mature consideration of the whole matter, I am however of opinion, that no rule of sufficient authority to guide us in any particular case can be formed from such calculations, and that our conduct is not to be governed wholly by them; but by the reflections of common sense working in a reasonable mind, *stored with the knowledge of such calculations*" (relating to the dimensions of the pelvis, the different size and compactness of different fetal heads) *and many other collateral circumstances*, "which it is impossible to enumerate

It is extremely desirable to have positive rules, to direct our conduct on every possible occasion in the practice of midwifery, provided these rules be perfectly unexceptionable. But to effect this, we must suppose that the science of midwifery is arrived at the greatest degree of perfection, of which it will admit; and that it is possible for practical writers to lay down rules applicable to every case, however diversified in its attendant circumstances—two points, that I presume will not be generally conceded. Hence it becomes necessary, after laying down a set of rules for the guidance of practitioners in this as well as in every other branch of the healing art, to leave something to their discretion and judgment. But this is not, I apprehend, telling the reader to act as he pleases, according to Dr. Osborn's assertion; but, to act according to the best of his judgement, after a due consideration of all the circumstances of the case. In laying down the following rules and directions, I do not wish to bind the accoucheur to a strict observance of them in every case, but leave him at liberty to deviate from them, whenever he, after a careful attention to the whole of the circumstances of a

or describe, so as to render them applicable and useful.”
Introd. to Mid. Vol. II. p. 240.

case, is convinced that he shall better consult the interests of the patients by so doing. We should never lose sight in our professional, or our general conduct of the following admirable observation, made by Terence :

“ Nunquam ita quisquam bene subducta ratione ad vitam fuit,
Quin res, ætas, usus, semper aliquid adportet novi,
Aliquid moneat, ut illa, quæ te scire credas, nescias :
Et quæ tibi putaris prima, in experiundo ut repudies.
Adelph. Act. 5. Sc. 4.

Having premised this, I shall proceed to lay down the following rules :

1. When the antero-posterior diameter of the superior aperture of a ricketty pelvis, taken from the *symphysis pubis* to the *os sacrum*, measures less than three inches, and more than $2\frac{1}{2}$ inches, a small fetus may be born alive through it, and even a moderate-sized fetus, provided the head be very compressible and the pains strong.†

† “ Si les obstacles sont plus considerables, lorsque le bassin n’a que trois pouces de petit diamètre, ils n’en deviennent pas toujours insurmontables aux agens naturels de l’accouchement, & la femme peut encore se délivrer seule, malgré la disproportion apparente, qui existe entre le diamètre de la tête de l’enfant, & celui du bassin. La femme peut jouir du même avantage dans le cas même, où le diamètre n’

2. When the antero-posterior diameter of the superior aperture of a ricketty pelvis, taken directly across from the *symphysis pubis* to the *os sacrum*, measures less than $2\frac{1}{2}$ inches, and more than $1\frac{1}{2}$, a fetus, unless it be premature, or of small size and the head very compressible, cannot be extracted alive through the pelvis, but may be brought into the world *per vias naturales* by means of the perforator and crotchet: And it may also be extracted by these instruments, when the distance from the *symphysis pubis* to *sacrum* is less than that just specified, pro-

auroit que trois pouces moins un quart, comme nous l' avons observé plusieurs fois. Ces accouchemens naturels, à la vérité, ne doivent être considérés que comme des exceptions à la règle: la souplesse des os du crâne de l' enfant, plus grande que d' ordinaire au terme de la naissance, ayant favorisé l' alongement de la tête, & le changement nécessaire à son passage. Des exemples plus extraordinaires viennent à l' appui de ceux-ci, & nous font connoître, que la nature sait quelquefois prévenir par de nouveaux écarts les suites fâcheuses, que pourroit avoir la mauvaise conformation du bassin: la souplesse du crâne, plus grande encore que nous venons de l' annoncer, ayant procuré à quelques femmes le bonheur de se délivrer seules, et avec autant de facilité que de succès, quoique leur bassin n' eût que deux pouces & demi de petit diamètre dans son entrée." Baudelocque § 95. & 96.

vided there be a space on one side, equal to the outline G H in Plate XII. fig. 2.†

3. When the superior aperture of a pelvis, distorted in consequence of *malacosteon*, measures $1\frac{3}{4}$ inch from before to behind, on each side opposite to the *acetabulum*, a moderate-sized fetus may generally be extracted by *embryulcia*, as the diameter taken from the *symphysis pubis* to the *os sacrum* is always considerably greater in these cases, and the pelvis sometimes will yield a little to the head as it passes. The practicability of the delivery,†† however, will de-

† It is to be observed, however, that an obstetrical operation, which is possible, is not always practicable, and that one, which is practicable, cannot always be performed with safety to the mother.

†† The pelvis of Mrs. Scott, a patient in the Gen. Lying-in Hospital at Edinburgh, had the following dimensions: "At the brim, from the centre of the sacrum to the most diverging point of the pubis $3\frac{1}{2}$ inches; from ditto to the part, at which the pubis approximated $2\frac{1}{4}$ inches; from the sacrum to the linea innominata, at the top of the acetabulum $1\frac{5}{8}$ inch; therefore the short diameter at the brim was, for the extent of an inch, $2\frac{1}{4}$ inches, but in the remainder of the space only $1\frac{5}{8}$. At the outlet, the space between the tuberosities of the ischia was $\frac{5}{8}$ of an inch, the spinous processes of the ischia were distant $3\frac{1}{6}$: the point of the coccyx, when drawn back, was distant from

pend in a great measure upon the depth of the tube of the pelvis, especially anteriorly.

I shall, in the next place, give some directions for the management of difficult labours, founded on the above rules.

1. Suppose an accoucheur should be called to a woman in labour, whose pelvis has the degree of deformity, specified in the first rule, and whose child presents naturally; instead of advising him to perforate the head of the child as early as possible after the labour has commenced, I would recommend, that he should wait patiently for one, two, three, or more days, if he

the junction of the ischia $2\frac{1}{2}$ inches, and the same from the tuberosity of the ischium on the left side, but on the right side it was half an inch less. The depth of the pelvis both anteriorly and posteriorly was $4\frac{1}{2}$ inches." When the consultation was held upon this case, about seven hours after the labour commenced, it appeared to be utterly impossible to open the head with safety. In about one hour and a quarter after the uterus burst. Two hours and a quarter afterwards an attempt was made to perforate the head but without success, and the woman died in less than 43 hours. This case shews the difficulty, or impossibility of perforating the head of the fetus, when the outlet and tube of the pelvis are very much contracted. See Hamilton's Outlines Ed. 4.

believe that he can do it with safety to the mother. For children have been born alive under these circumstances, and we cannot say in the beginning of any individual case, that the uterine contractions will not in time mould the child's head to the passage and expell it, or at least force it so low, that it can be extracted with the forceps, or lever in a living state. To conduct a labour of this kind in such a manner as to have the full benefit of the uterine contractions, with as little danger as possible to the mother, requires considerable attention. It will be proper in every case to support the spirits of the mother by giving her hopes of a fortunate termination of her labour. It will generally be necessary to evacuate the *rectum* once, or oftener by means of glysters, which have not infrequently the effect of encreasing the force of the pains: And it will sometimes be requisite to evacuate the bladder by the catheter. When the patient is strong and plethoric, inflammation and fever are to be obviated by the observance of a strict antiphlogistic regimen, and sometimes by blood-letting. When the patient has been in a weak state from the commencement of her labour, or her strength is much diminished by the continuance of it, it always is proper to support her with nutritious food, and sometimes with wine, or other cordials. When

the true uterine contractions are disturbed by the presence of spasmodic pains, these should be palliated, or removed by opiates, which are in these cases found particularly useful. Opiates may also be employed occasionally with advantage to procure sleep: and the patient should not be too frequently examined *per vaginam*. If the uterus be placed obliquely, the disadvantages, arising from thence, may be obviated, or lessened, in the manner pointed out above.

By a careful attention to these circumstances, the accoucheur may be enabled to wait, till the *os uteri* be completely dilated, and the child's head begin to press against the *perinæum*, when it will become necessary for him to afford assistance; or he may wait, till the *os uteri* be fully dilated, and the head of the fetus forced so low that it may be extracted either with the lever or forceps;* or, finding that the *os uteri* remains

* When the fetal head is of a moderate size, and sufficiently compressible, the moulding of it to the tube of a contracted pelvis, and its descent and final expulsion require the contractions of the uterus to be strong and repeated for a considerable length of time. Indeed upon many occasions it is the *power* of the labour-pains solely, which determines a labour to be considered as a crotchet case, or as requiring the use of the forceps or lever, or as capable of

contracted, and becomes thickened or tumefied; or that the strength of the patient declines, and her pains grow more feeble, and that the head does not descend, he may, after waiting as long as it is deemed prudent, or safe, proceed to perforate the head of the child.† To do this pro-

being accomplished without any instrumental aid whatever, I attended a woman, whose pelvis was very much distorted from ricketts, in her first labour; and, her pains being very strong and frequent, the head descended so low into the tube of the pelvis, that I succeeded easily in delivering her with the *vectis*: But in her three succeeding labours, the pains being trifling, the head of the child remained above the superior aperture of the pelvis, and, after waiting as long as was deemed prudent and trying unsuccessfully to bring the head down by the *vectis*, it was found necessary for the preservation of the mother to open the head of the child, and extract it with the crotchet.

† In some of these cases, I have thought it advisable first to try what could be done with the *vectis*, before I opened the head: And in one case I accomplished the delivery of the woman, and saved the child by it, where I had great reason to believe, that I should otherwise have been under the necessity of perforating the head of the fetus. A somewhat similar case is related by Dr. Bland, which I shall adduce in this place, as it establishes the superiority of the *vectis* over the forceps under certain circumstances, whilst it confirms the propriety of the practice, which I had adopted before his book was published. “The late Dr. Bromfield,

perly, she should direct the point of the perforator with the fingers of one hand to one of the sutures; he should push the instrument into the head as far as the rests; and he should then, by opening the instrument in different directions, make an opening sufficiently large to allow of the removal of the whole, or greatest part of the *encephalon*, which may be done with a spoon, a

who was thought to excel in skill and address in using the forceps, a few years before his death attended a person in a difficult labour; after waiting the event of the pains, until there was reason to fear some great mischief would happen to the woman if he delayed the delivery any longer, as the head of the child was not descended low enough to take hold of it with the forceps with any prospect of success, he began to think of making use of the perforator and crotchet; but first desired the assistance of Dr. Garthshore. Dr. G., after carefully examining the position of the head of the child agreed, that it would not be proper to apply the forceps, but ventured to assure his colleague, that he had no doubt but the woman might be delivered with the assistance of the lever; which he accordingly proposed to use. To this proposition Dr. B. at first objected, as he entertained an almost invincible aversion to that instrument: but, thinking it dangerous to delay the delivery longer, and seeing no possibility of bringing the child without opening its head, he consented that the lever should be introduced; and from the instructions Dr. G. then gave him, he was enabled to deliver the woman with safety of a living child in about the space of half an hour." *Observations &c.* p. 192.

blunt hook &c. Should any symptoms supervene soon after the evacuation of the *cranium* has been accomplished, which render a speedy delivery necessary, the blunt hook, or crotchet should be fixed in the inside of the *cranium*, and, the left hand being placed in the *vagina*, with the fingers opposite to the point of the instrument, in order to guard against contusion or laceration of the *vagina* &c. if the instrument should lose its hold, the necessary degree of force is to be used in extracting the child. If the pains have not ceased, the attempts to deliver should be made during the presence of these, and he should rest in the intervals: If the pains have ceased altogether, the attempts to extract should be made, and intermitted from time to time as if labour pains were present. In other cases he may generally wait with advantage, till the uterine contractions have compressed the *cranium*, and forced it so low into the pelvis, that he can easily extract the child with his fingers, or the blunt hook, or crotchet.

When in cases of this kind he succeeds in saving the life of the child, he will experience great pleasure; and, when he has not been able to do this, he will have the satisfaction to think, that its life was not unnecessarily sacrificed, and to find

that the patient and her friends give him credit for having done his duty, and for not having proceeded rashly, or precipitately to the use of the perforator and crotchet.

When the child presents preternaturally, the greatest care and attention become necessary. In extracting children by the feet through a well formed pelvis, we have sometimes the mortification to find, that they die in the birth, from compression of the *funis umbilicalis*, our minds should therefore be fully impressed with the extraordinary degree of danger to the child, attending preternatural births, when the pelvis is distorted in the degree under consideration. We should have a quill, and some warm water prepared, that we may be able to inflate the lungs of the child, and apply warmth to it as soon as it is born, if it should be apparently dead. We should ascertain the form and dimensions of the tube or cavity of the pelvis, that we may be enabled to take advantage of our knowledge of them in the extraction of the head of the fetus: For example, we may find it more advantageous to place the longitudinal diameter of the head in the transverse than in one of the oblique diameters of the superior aperture.—In two instances I have

been induced to turn the child, when the head presented, in a woman, whose pelvis appeared to me to measure less than three inches in its antero-posterior diameter. She had been three times delivered by the crotchet, and once by myself, after waiting as long as I thought it safe or prudent. Her pains were sharp and powerful in the beginning of her labour, and continued so till the *os uteri* was dilated, and the membranes gave way. They were afterwards tolerably frequent, but inefficient; the child's head did not descend into the pelvis, and being too high to be extracted by the lever, I perforated the head, and then extracted the child with ease. On inquiry I learnt that her two preceding labours had been very similar, and I therefore determined, in her next labour, if the head should remain above the superior aperture after the complete dilation of the *os uteri* as before, to attempt to preserve the life of the child by turning it immediately after the rupture of the membranes. Being sent for in her succeeding labour, and finding it to proceed in the same way, as the others had done, I dilated the *os externum* very completely, ruptured the membranes, and passed my hand into the *uterus*. I brought down the feet without much difficulty, gave the body and head the most advantageous turns, and extracted

the child alive and healthy. The event of this experiment encouraged me to try it again in her next labour, and I again succeeded. It may be urged, perhaps, that these two children would have been born alive if the practice of turning them had not been adopted; nor can I say that they would not; but I very much doubt it. This is a practice, however, that ought not to be employed without much deliberation, and after the child has been lost in two, or more successive labours, conducted in the usual way.

2. When an accoucheur is called to a woman in labour, whose pelvis has the degree and kind of deformity, specified in either the 2d or 3d of the rules given above, and the head of the child presents, although he cannot reasonably expect that a mature child can be born alive, it will in general be proper to wait 12, or 24 hours, or even longer, that the *os uteri* may become dilated, the *liquor amnii* be totally discharged, and the *uterus* closely contracted round the body of the fetus. For the perforation and evacuation of the *cranium* may be effected with more ease and safety under these circumstances, than when undertaken at an earlier period. After the *en-cephalon* has been completely, or freely discharged,

it will be proper to wait 6, 12, or 24 hours, that the head may be compressed, and forced down into the pelvis, unless from the urgency of the case it should be deemed more prudent to attempt the extraction of the child sooner. The extraction of the child is to be attempted in the manner explained above. But, if the directions given above should not be sufficient, we should break the bones, composing the upper part of the *cranium*, by repeated applications of the crotchet; and we should loosen them from the scalp, and extract them carefully with the fingers, or a pair of forceps, to avoid injuring the *vagina* and other soft parts. When the deformity is very great, it will be necessary to apply the crotchet on the outside of the *cranium*, in order to give the base of it a more favourable direction, by turning it edgewise, or more or less endwise. We are then to exert the force requisite for its extraction, agreeably to the directions already laid down. Having brought down the head and neck, should the shoulders not follow, and the pains be trifling, it will be necessary to bring down one, or both arms with the blunt hook, or to perforate the *thorax*, and remove the *viscera*. The *abdomen* may be afterwards perforated, to give vent to effused fluids, or gases,

and the *viscera* may be removed, if such a diminution of its volume be required.

When the presentation of the child is preternatural, the feet are to be brought down, and we shall in many cases be able to extract the fetus without opening its head through a pelvis, that will not allow a child to pass with the head foremost, unless the perforator and crotchet be previously employed. A poor woman, who had been delivered five times by the crotchet, and in two of these labours had been attended by myself, sent for me again in her sixth labour. The child presented with the feet, and was dead. Being acquainted with the form and dimensions of this ricketty pelvis, I gave the head the proper turns, and, after using considerable exertion for some time, I succeeded in bringing away the child, without opening the head. On examining it with attention, I found the *cranium* very much depressed from the base upwards in the part, which had been forced over the protuberance of the *os sacrum*. The woman recovered without any bad symptoms. From this case, which occurred more than ten years ago, I was induced to conclude, that, whenever a pelvis will allow the base of a fetal *cranium* to pass with ease flat-wise through it, the head may be extracted with-

out being opened, provided it be practicable to give it the most favourable direction : The exertion, that may be used in this way, being in general sufficient to produce the requisite compression of it, and change of figure. But we have no chance of saving the child's life in these degrees of deformity : And the propriety of opening the head, or omitting it in each individual case, is to be determined from the ease and safety, with which the perforator can be employed, and the relative size of the head and pelvis. When the hand cannot be introduced, or the feet of the child cannot be brought down, it will be necessary to have recourse to hysterotomy.

3. When the pelvis is in the fourth degree of contraction, as there is no chance of accomplishing the delivery *per vias naturales* if the child be mature ; and, as some danger may arise either to the mother, or fetus, or both from delay, the sooner the Cesarean Operation is performed after the *os uteri* is dilated to about the size of half a crown, the more likely it is to prove completely successful. If, however, the child be known to have been dead for some time, or if the labour should be premature, it may, in some cases, be proper to wait the effect of the labour-

pains, and to make an attempt to extract the child through the pelvis, provided the perforator and crotchet can be directed with safety to the head of the child.

On inducing premature Labour.

Hitherto I have supposed the patient to be actually in labour, or at the full period of utero-gestation, before the accoucheur is called, or consulted: But in some cases he is consulted in the earlier months, and it remains to be considered, how far it is proper, or justifiable to bring on premature labour in women, whose *pelves* are distorted, with the view of superseding *embry-ulcia* and the Cesarean section? For no laws, I presume, will prevent children from being begotten under such circumstances. I shall consider this practice under two heads.

1st. As employed in one of the three last months of utero-gestation, with the view of preserving the lives of both mother and fetus, when the pelvis has the first, or second degree of deformity.

2d. As practised in the earlier months for the

preservation of the mother only, when the pelvis is in the fourth, or last degree of deformity.

1. M. Baudelocque is of opinion, that premature labour should never be induced except in cases of flooding: But the propriety of opening the head of a living fetus, with the view of preserving the life of the mother, being generally, if not universally acknowledged by british practitioners, it will readily be granted, I presume, by them, that the practice of bringing on premature labour in those mothers, whose children have been lost in several instances, and who are known to be incapable of bearing a mature child alive, is justifiable and proper.† It will, there-

† Dr. Denman was informed by Dr. Kelly, "that about the year 1756 there was a consultation of the most eminent men in London at that time, to consider of the moral rectitude of and advantages, which might be expected from the practice" (of bringing on premature labour) "which met with their general approbation. The first case, in which it was deemed necessary and proper, fell under the care of the late Dr. Macaulay, and it terminated successfully. The patient was the wife of a linen-draper in the Strand." Dr. Kelly also informed him, that he had practised it himself, and that the operation had been performed three times upon the same woman, and that two of the children had been born alive. Dr. Denman has very properly observed, that the principle of this practice, viz. to make an attempt to preserve the life of a child, which must otherwise be lost, is commend-

fore, only be necessary for me to consider the best time for attempting this ; which must be determined from the dimensions of the pelvis, in each individual case, compared with the mean size and compressibility of the fetal *cranium* in the 7th, 8th, and 9th months. The chance of rearing a premature child is not great, but this *cæteris paribus* must necessarily be greater, the nearer the fetus is to maturity ; consequently, if the tube of the pelvis be sufficiently capacious to transmit a child safely in the beginning of the 9th month, we ought not to attempt the delivery at an earlier period. What the mean dimensions of the fetal head (not the *cranium*) are in

able : He is also convinced of the safety of it, with respect to the mother, because in eight cases, wherein he either performed or recommended it, no hazardous accident arose, that could be imputed to it : And he is of opinion, that under circumstances "just preventing the successful use of the *vectis*, or *forceps*, and just compelling us to the fatal measure of lessening the head of the child, it may become a duty to propose, on a future occasion, the bringing on premature labour at seven months, or any later time, according to our sense of the disproportion between the head of a child, and the cavity of any particular pelvis." When the membranes have been punctured with the view of bringing on premature labour, the pains have sometimes come on in less than 24 hours, in other cases a fortnight has elapsed. See Denman's *Introd. to Mid.* Vol. II. p. 213 &c.

the beginning of the 9th month I am not able to state, because I have hitherto only measured the head of one, believed to be born at this period, the dimensions of which I shall now lay before you.

DIAMETERS: *Oblique* $4\frac{3}{4}$ inches. *Longitudinal* $4\frac{1}{2}$ inches: *Transverse* $3\frac{1}{2}$: *Facial conjugate*, from one zygomatic arch to the other, $2\frac{1}{2}$ inches: *Basilar conjugate*, from one mastoid process to the other, $1\frac{3}{4}$.
CIRCUMFERENCES: *Large* $13\frac{3}{8}$ inches: *Middle* 12 inches: *Small* 11 inches.

This fetus, if carried another month, would most probably have been of large size, because the dimensions of its head are equal to, or even larger than those of the heads of some children, born at maturity; and because the mother had only born one child before, which was of a very large size.

Neither can I determine the degree of compressibility of the *cranium* of a fetus, born in the beginning of the 9th month; but it is most probably greater than that of a mature fetus, the ossification of the skull being less advanced at that period.

I shall next lay before you the dimensions of the head of a fetus, believed to be born at the end of the seventh month.

DIAMETERS: *Oblique*, $4\frac{1}{2}$ inches: *Longitudinal* $3\frac{1}{2}$ inches: *Transverse*, $2\frac{3}{4}$ inches.—
CIRCUMFERENCES: *Large* $11\frac{5}{8}$ inches: *Middle*: $10\frac{3}{8}$: *Small* $8\frac{2}{8}$.

I am not prepared to state the degree of compression, that this head would have born without its proving destructive. Nor can I give the dimensions, or compressibility of the fetal head, at any intervening period: But I hope a tolerable conjecture may be formed from these *data*, and from what has been delivered above concerning the bulk and compressibility of the head of a mature fetus.

The danger, to which the mother is exposed by inducing premature labour, is proved by numerous experiments to be very trifling, when it is done with moderate care and attention. The immediate danger to the fetus, however, is more considerable. For, the membranes being ruptured and the *liquor amnii* discharged, previously to the accession of the labour-pains and before the *os uteri* has assumed the proper disposition to dilate, the tender immature fetus, deprived of the protection afforded by the waters, must necessarily sustain the whole force of the contractions of the *uterus*, requisite for

effecting the dilatation of the mouth of this organ, as well as its own expulsion through the distorted pelvis, and *os externum* ; which must be very injurious and often fatal to it. The future danger to the fetus, as has been before observed, will be greater, or less according to the period, at which labour is brought on.

2dly. When the pelvis is in the fourth degree of contraction, it is not, perhaps, possible that a premature child, capable of being reared, should be born *per vias naturales*. Neither is it possible that a mature child of the ordinary size can be extracted this way, with safety to the mother, by any means, with which we are acquainted. We know that the child, if alive, may be extracted with safety by hysterotomy ; but this operation is extremely dangerous to the parent. It is, therefore, deserving of inquiry, whether abortion or premature labour should be induced under such circumstances, preferably to performing the Cesarean section, whenever from a previous acquaintance with the case, and by the consent of the woman and her friends, the accoucheur has it in his option to act in the manner, which he may judge most proper ?

If the life of the mother and the *fetus in utero* ought in any cases to be placed in competition,

it is, perhaps, in determining these two questions.

1st. When a woman has conceived, whose pelvis is contracted in the degree under consideration from Exostosis, Ricketts, Fracture, or Dislocation, but who is in other respects healthy, and may be expected to live free from pain and infirmity, provided her delivery can be accomplished with safety to herself, Is it justifiable to bring on abortion? I am of opinion, that it is; because the life of the mother is more valuable to herself and her friends, if not to society, than that of the child. 2dly. When a woman has conceived, whose pelvis is distorted in an equal degree from *Malacosteon*, whose life must necessarily be embittered by pains and infirmities, and who cannot be expected to live many months, provided her delivery can be *safely* effected, Is it justifiable, or proper to sacrifice the child, by inducing abortion with the view of prolonging her miserable existence? I am of opinion, that it is not; because the child's life is in this case of more value to society, to its friends, and to itself than that of the mother. Indeed the mother's life is often a positive evil to herself under such circumstances.

I trust I have now established the propriety of the following conclusions, in direct contradiction

to the *decision* of a Monthly Reviewer, and the assertions of Dr. Osborn, many of which have been echoed and reechoed by yourself, namely :

1. That Hysterotomy has been many times performed, without destroying the mother, and has very often preserved the child ; and that it is not only a justifiable, but a necessary operation.

2. That the operation of *Embryulcia* is neither perfectly safe, nor practicable in all cases of great deformity of the pelvis, and, consequently, cannot always supersede the necessity of hysterotomy even in cases of simple deformity.

3. That the propriety and necessity of hysterotomy are not confined to cases of deformity of the pelvis.

4. That the *fetus in utero* possesses sensibility.†

† Dr. Osborn, in support of his singular opinion, has been induced to make the following assertion, "bodily sensation would be of no service to a child in utero, and nature *never* performing works of supererrogation either in the moral or physical world, I must believe it has no feeling before birth" (Essays p. 449): And, as it may be thought that I have not sufficiently attended to this argument, I shall

5. That cases do occur, in which the value of the life of the *fœtus in utero* is not so inconsiderable, as almost to exclude the possibility of comparison with that of its mother, viewed either with respect to itself, its friends, or the community.

6. That children have been, and consequently may be born alive, where the pelvis is certainly less than three inches from *pubes* to *sacrum*, or in some point of the superior aperture from before to behind; and, consequently, that the use of the perforator in the very beginning of labour, where a pelvis has the dimensions just stated, is extremely improper, as it may prove unnecessarily destructive of the life of the child.

7. That it is not always practicable to extract

reconsider it in this place.—By parity of reasoning Dr. Osborn might insist, that a male fetus has *no testes*, and a female fetus *no uterus* or *ovaria* before birth; for it is as easy to shew, that these parts are of *no service* in the fetal economy, as to prove that sensation is unnecessary. Again, he might assert, that a male animal has no *nipples*, because they are of no service to it; or else he might contend, that it was the intention of nature, that a male should give suck, because he has nipples. Who does not see the weakness of this argument, from the instances already adduced? And many more of a similar nature might be brought forward.

a moderate-sized fetus by the crotchet, through a pelvis, the superior aperture of which has a space equal to $2\frac{3}{10}$ inches from the *symphysis pubis* to the *sacrum*,† much less when there is only $1\frac{3}{4}$, or $1\frac{1}{2}$ inch from before to behind in any part of this aperture.

8. That 30 hours are not a sufficient time to complete the putrefaction of the *fetus in utero*.

9. That it is not proper to defer every attempt to extract the child for 30 hours after the perforation of its head, when this has been done in the beginning of labour, in order that the body may become putrid.

10. That the crotchet may, in some cases, be applied with great propriety, safety, and advantage on the outside of the head.

As an *eroneous decision* upon a point of practice, given in so respectable a publication as the *Monthly Review*, may mislead many readers, who are incapable of judging for themselves, and prevent the performance of the Cesarean operation,

† See *Defence &c.* p. 183, and above p. 437. in the note.

where it is actually indicated, Is it too much to expect that the Reviewer will reverse his decision ?

As Dr. Osborn has expressed himself in the following words with respect to an opinion, published by Dr. Hamilton ; “ I trust, that upon this suggestion, his candour and maturer judgement will lead him at least to correct, if not altogether to retract, *an opinion demonstrably ill-founded* ; an opinion too, not upon a speculative point, or of a trivial nature, but of the first practical importance ; involving in its probable consequences the dearest interests of humanity, and than which nothing may eventually be of greater moment to those persons who, from extreme deformity, unhappily become the objects of its influence.”† Is it not allowable to hope, that Dr. Osborn will be induced to retract his own demonstrably ill founded opinions ?* For

† Essays p. 444. * How differently we estimate the practical precepts of Dr. Osborn ! You have asserted that his method of delivering by the crotchet “ marks a new *Æra* in the practice of Midwifery.” The Dr., however, himself does not agree with you upon this point. These are his words : “ *I can lay claim to no merit whatever on the occasion. The operation was undertaken contrary to my opinion ; succeeded very contrary to my expectation, and yet in the performance it neither required extraordinary skill, or ex-*

my own part, I think it a duty incumbent on the Dr. to retract many of his opinions, because his authority may be sufficient to mislead a great number of accoucheurs, since he has informed us in his preface (p. 10), that more than 1200 of the present practitioners of Midwifery in this kingdom have done him the honour of attending his lectures; and has intimated the probability of the teacher's opinions' having a considerable effect upon the scholar.

To conclude, Is it not also proper and necessary, that *you* should retract your erroneous assertions, relating to the operations of embryulcia, hysterotomy, and the section of the symphysis pubis? You may thus at once discharge a duty to the public, and make a small atonement to your other brethren, concerned in the two Cesarean operations at Manchester, as well as to him, who has the honour of subscribing himself,

Sir,

Your most obedient servant,

JOHN HULL.

traordinary attention." Essays p. 258. And I leave it to be determined by yourself, whether an opinion relative to *Æras* in Midwifery, delivered by me in page 59, be not very well founded.

P. S. In addition to the case, related in p. 119 &c., I think it proper to introduce here a brief account of a case, in which the *uterus* was successfully extirpated, in this kingdom, by Mr. Hunter of Dumbarton.—On January the 27th 1795, a woman was delivered of a stout boy after a labour of a few hours continuance. The next day it was found necessary to pass the catheter, and the apex of a tumour was found projecting beyond the *os uteri*. Mr. H. introduced his hand into the *uterus* with the view of removing this tumour, which was of the size and form nearly of a large pear, but he did not succeed. On the eighth day after delivery, the tumour with the whole body of the uterus completely inverted, protruded through the *os externum*, and the excrescence was with some difficulty separated from the *fundus uteri*: but Mr. H. could not reduce the inversion, and it is very remarkable that, although considerable force was used, these attempts produced no pain. He therefore forced back the *uterus* into the *vagina* in its inverted state. The next day it protruded, and was again returned into the *vagina*. On the ninth day after the complete inversion took place, the *uterus* was again protruded; and, as the use of the catheter was necessary, when the *uterus* was

within the *vagina*, and the urine was discharged without using this instrument, when it was prolapsed, the *uterus* was not again returned into the *vagina*. About a fortnight after, a discharge of a thin, watery, fetid fluid took place from the whole surface of the womb, and hectic symptoms supervened; which induced Mr. H. to tie a strong ligature round the neck of the tumour, close to the *os externum*. He waited six hours, and no pain being produced, he then cut off the whole *uterus* with a scalpel, and the operation was finished, he believes, before the patient knew it was begun. In 14 days she was able to sit up, and at the end of a month was perfectly recovered, and has since that time enjoyed a good state of health. The *uterus* was given to Dr. Jeffray, Professor of Anatomy at Glasgow. See Duncan's Annals &c. Vol. IV. p. 366.

I think it proper also to add, that M. Bordenave, in his *Mémoire sur la nécessité de faire l'opération Césarienne aux femmes, qui meurent enceintes* &c., mentions a case, in which a fetus of six months was extracted by this operation with appearances of life after the mother's death, and observes, on the authority of Cangiamila (whose *Embryologia Sacra* I have not been able to procure), "that in the city of Montreal and the

neighbourhood, in the space of 24 years, 21 living children had been extracted by the Cæsarian operation : that between the years 1704 and 1748 sixty children had been extracted in the same manner at Caltanissetta, of whom only five were found dead : that at Victoria, a city in the diocese of Syracuse, between the years 1734 and 1752, the Cæsarian operation had been performed 20 times, and in every case a living child extracted : and that at Sambuca, a city in the diocese of Girenti, 22 pregnant women having died, from ten of them children were extracted alive—” See Duncan’s Med. Comm. Dec. 1. Vol 10. p. 103.

A SHORT
EXPLANATION OF THE PLATES.

PLATE 1:

Fig. 1. A well formed Female Pelvis.

A A The 4th and 5th Lumbar Vertebræ.

B The Os Sacrum.

C The Coccyx.

D D The Ossa Iliæ.

a a The cristæ.

b b The anterior and superior spinous processes.

c c The anterior and inferior spinous processes.

d d The posterior spinous processes.

e e The linea innominata.

f f The sacro-iliac synchondrosis.

E E The bodies of the Ossa Ischia.

g g The tuberosities.

h h The branches.

i The spinous process of the right os schium.

F F The bodies of the Ossa Pubis.

j j The branches.

k The symphysis, with the spinous process of the ossa pubis, on each side.

H H The Foramina Ovalia.

I The arch of the pubes.

Fig. 2. The distorted Pelvis of Mad. Supiot, taken from Bromfield's figure of her Skeleton.

A The two last Lumbar Vertebrae.

B B The Ossa Iliæ.

C C The Ossa Ischia.

D D The Ossa Femorum.

Fig. 3. A Pelvis distorted, in consequence of a dislocation of the thigh-bones, taken from Tab. 64. of Sandifort's Mus. Anatomicum.

A A The Ossa Femorum dislocated upwards and backwards, so as to occupy the space betwixt the two anterior spinous processes of the Ossa Iliæ.

B B The Acetabula.

C C The Foramina Ovalia.

PLATE II.

A View of the Superior Aperture of a well-formed Pelvis, taken from Baudelocque.

A B The Antero-posterior, Conjugate, Short, or Right Diameter.

C D The Transverse Diameter.

E F }
G H } The Two Oblique Diameters.

I K }
L M } The space betwixt the sacro-iliac symphy-
ses, and the anterior extremities of the
Ossa Pubis.

PLATE III.

A View of the Inferior Aperture of a well formed Pelvis, taken from Baudelocque.

A A The Antero-posterior Diameter.

B B The Transverse Diameter.

C C }
D D } The two Oblique Diameters.

Obs. The two lines A B A B, drawn from the extremity of the coccyx to each end of the transverse diameter, are considered as the oblique diameters by Stein: "die schiefen gehen zu beyden seiten von den ränden der sitzbeine schräg zur spitze des steisbeines hin. Beyde schiefe durchmesser machen daher, bey ausgedehntem steisbeine, mit dem grossen fast einen gleichseitigen triangel aus." Theor. Anleitung zur Geburts hülfe. § 44. & Tab. 1. fig. 2.

PLATE IV.

A Vertical Section of a well formed Pelvis.

A B C A Right Line shewing the inclination of the superior aperture.

G H D A Right Line shewing the axis of the superior aperture.

H I A Dotted Curved Line, shewing the axis of the tube, or cavity of the pelvis.

F F A Right Line, shewing the obliquity of the inferior aperture.

K I A A Right line, shewing the axis of the inferior aperture of the pelvis.

D K C A Right Line drawn horizontally, to shew the angles, formed by the axes of the two apertures of the pelvis, &c. with the horizon.

Obs. According to Mulder, Doct. Bang (in his Tent. Med. de Mech. partus *Hauniæ* 1774), first pointed out, that the central line, or axis of the pelvis is a curved line, and corrected the error of those authors, who thought that this axis could be expressed by a straight line. "Vix est quod moneam lineam hanc barocentricam incurvam debere esse, ut Axis Pelvis sit, quem admodum primus, quantum novi, hanc veritatem demonstravit Doct. Bang." &c, &c. Hist. Liter. &c. &c. p. 137.

PLATE V.

Fig. 1. A View of the Superior Aperture of Eliz. Sherwood's Pelvis, as described by Dr. Osborn.

A B The Dimension of the space betwixt the pubes and sacrum.

C D The Dimension of the widest space, from before to behind, on the left side of the pelvis.

E F The Dimension of the widest space, from before to behind, in the right side of the pelvis.

G H The Dimension of the space, betwixt the right os ilium and the os sacrum.

Fig. 2. A View of the Superior Aperture of the Pelvis of Martha Rhodes.

A B The Dimension from pubes to sacrum.

C D The largest Dimension from the fore to the back part in the right side of the pelvis.

E F The largest Dimension from the fore to the back part of the pelvis on the left side.

G H The Dimension of the Transverse Diameter.

PLATE VI.

A View of the Superior Aperture of a distorted Pelvis, taken from a Cast in Mr. White's Collection.

A B The antero-posterior diameter, as taken from the left os pubis to the middle of the os sacrum.

S B. The antero-posterior diameter, taken from the symphysis pubis to the middle of the os sacrum.

- C D The widest space from the fore to the back part on the left side of the pelvis.
- E F The widest space from the fore to the back part of the pelvis on the right side.
- G H The transverse Diameter.
- G B The longest space betwixt the right os ilium and the middle of the os sacrum.
- H B The longest space betwixt the left os ilium and the middle of the os sacrum.
- S I The space betwixt the left sacro-iliac synchondrosis, and the extremity of the left os pubis at the symphysis.
- S J The space betwixt the right sacro-iliac synchondrosis and the anterior extremity of the right os pubis.

PLATE VII.

A View of the Pelvis of Elizabeth Thompson.

N. B. The Dotted Outline exhibits the exact size and form of the Superior Aperture.

A A The Antero-posterior Diameter.

G G The Transverse Diameter.

B B The space betwixt the bodies of the ossa pubis.

A B B The largest circle, that can be formed in any part of the superior aperture of the pelvis.

C C D D E E F F The exact Spaces betwixt these respective points of the superior aperture.—The dimensions are exactly given in page 197.

PLATE VIII.

Fig. 1. A Posterior View of a Monstrous Fetus, which occurred to M. Peu.

Fig. 2. An Anterior View of a Monstrous Child, which occurred to myself.

PLATE IX.

Two Views of a Monster, which occurred to Mr. Hall and Mr. Dutton.

a a The head, which was first born.

N. B. Since the preceding part of this work was printed, I have seen a very singular monster in the possession of Mr. White. The two fetuses are males, and are united in such a manner by their trunks, that one head forms one end, and the other head the other end of the monster; two lower extremities, with the parts of generation, being placed on each side of the double trunk, between the right arm of one fetus and the left arm of the other. On an external view it is impossible to say to which fetus either pair of lower extremities belongs. Perhaps a more clear

idea may be obtained of this double fetus by supposing two male fetuses, divided above the pelvis; by supposing a cross formed of the divided portions, by placing the two pairs of lower extremities opposite to each other, and the two heads with the upper parts of the trunks opposite to, and in an exact line with each other; and then by supposing the two pelves and the two trunks very exactly joined together. It is hardly possible to conceive, that two fetuses could have been united in a way, more favourable to delivery than these are, supposing the head to present, and more unfavourable, supposing the feet to present.

PLATE X.

An Anterior View of a Monster, in the Collection of Professor Sandifort.

PLATE XI.

An Anterior View of a Monster, which is also in the Collection of Pr. Sandifort.

A. A Sac, which is supposed to contain a part of the abdominal viscera; at the bottom of it is seen the common funis umbilicalis.

PLATE XII.

Fig. 1. The head of a moderate sized Child, reduced as much as possible by the Perforator and Crotchet, in order to determine the smallest aperture, through which it can be brought by the latter instrument.

A B The distance from the base of the cranium to the Chin.

C D The distance from the external canthus of one eye to that of the other.

I A Transverse section of the Crotchet.

E F The Space on the right side of Sherwood's Pelvis applied to the head of this child.

G H The Space on the right side of the Superior Aperture of the Pelvis, figured in Plate vi., applied to the head of this fetus.

Fig. 2. A Perpendicular Section of a well formed pelvis, with two Pelvimeters applied to it, taken from M. Baudelocque.

A. The Compas d' épaisseur of M. Baudelocque.

a The Joint.

b b The two branches, with their buttons, applied to the pubes and sacrum.

c A graduated scale, pointing out, by the number of inches, and parts of inches, the thickness of the body, included betwixt its branches.

B The Pelvi-met of M. Coutouli.

d The first branch ; of which the curved extremity *f* is applied to the base of the os sacrum.

h h Two hooks for holding the instrument.

g g The 2d branch ; of which the curved extremity *e* is applied to the symphysis pubis ; and the scale at the other extremity is intended to shew the dimensions of the space betwixt the pubes and sacrum.



CORRECTIONS AND ADDITIONS.

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87.	11.	For heart, read art,
94.	17.	For <i>Every</i> read <i>Almost every</i>
98.	11.	For or 8th read 8th or 9th
103.	18.	For IV. read V.
122.	20.	For puæ read quæ
135.	1.	of the Note. After cases, add and some of earlier date,
340.	16.	After case, add except the short account, given in Table 1st., Case 50th.,
382.	15.	For <i>prutredine</i> , read <i>putredine</i>
417.	12.	For Sherwood's, read Sherwood.
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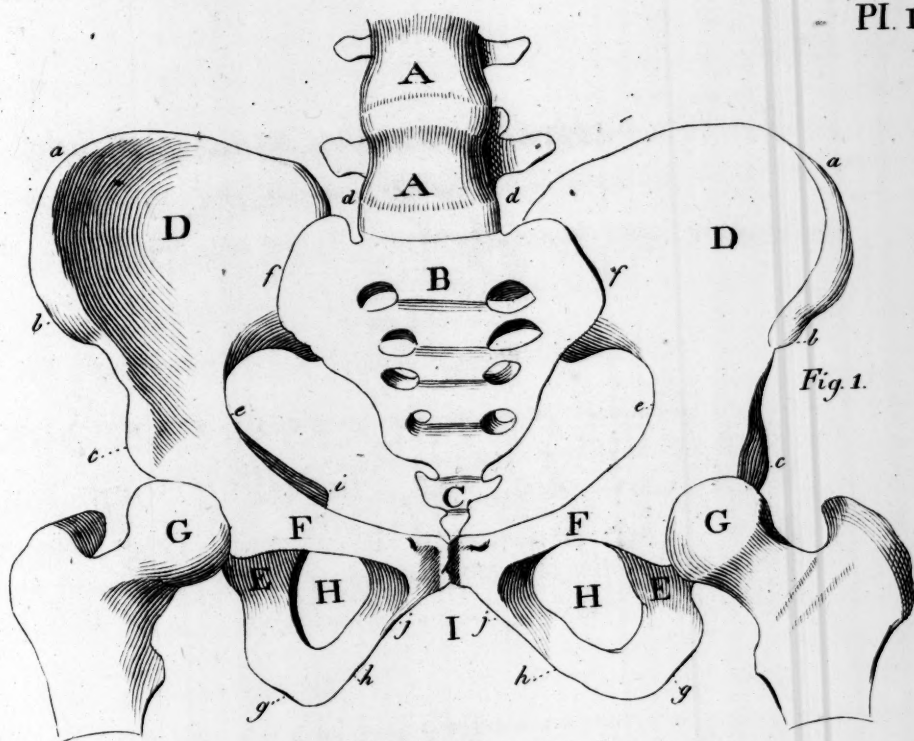


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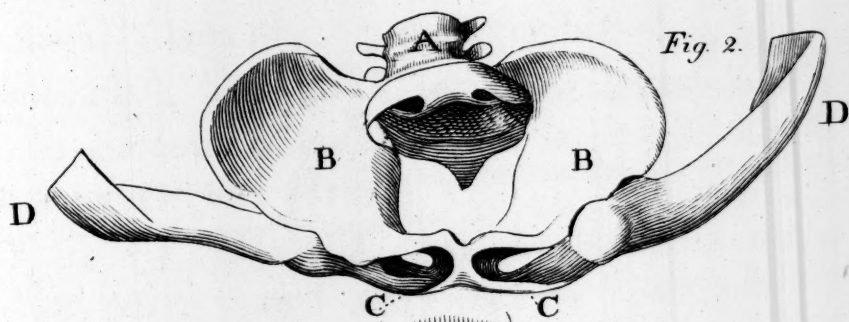


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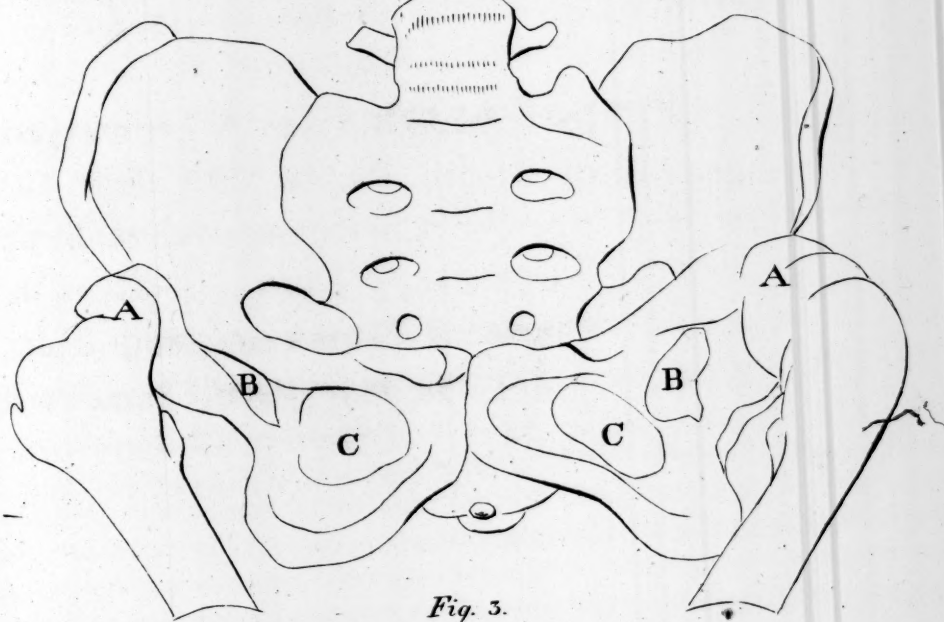
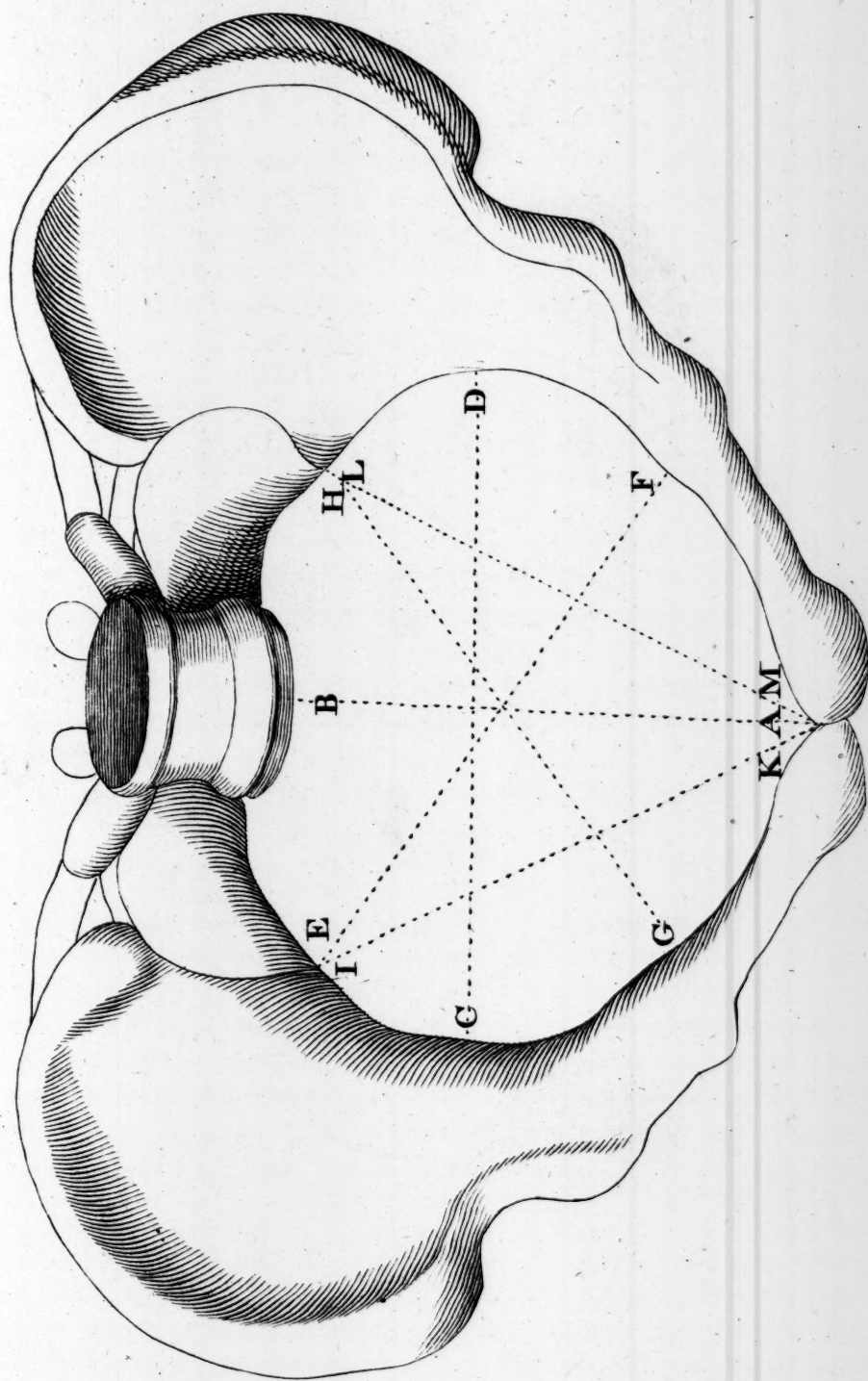
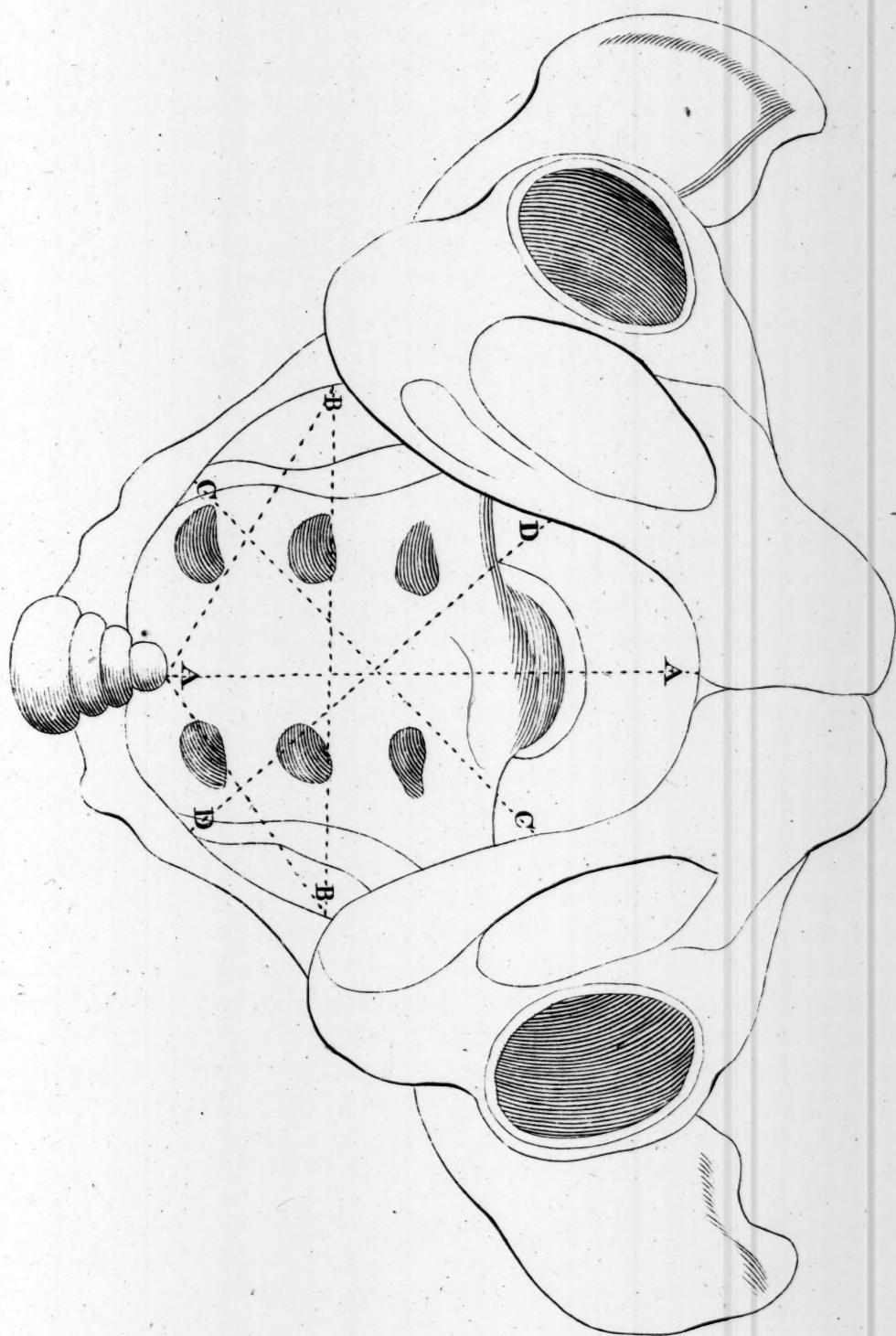


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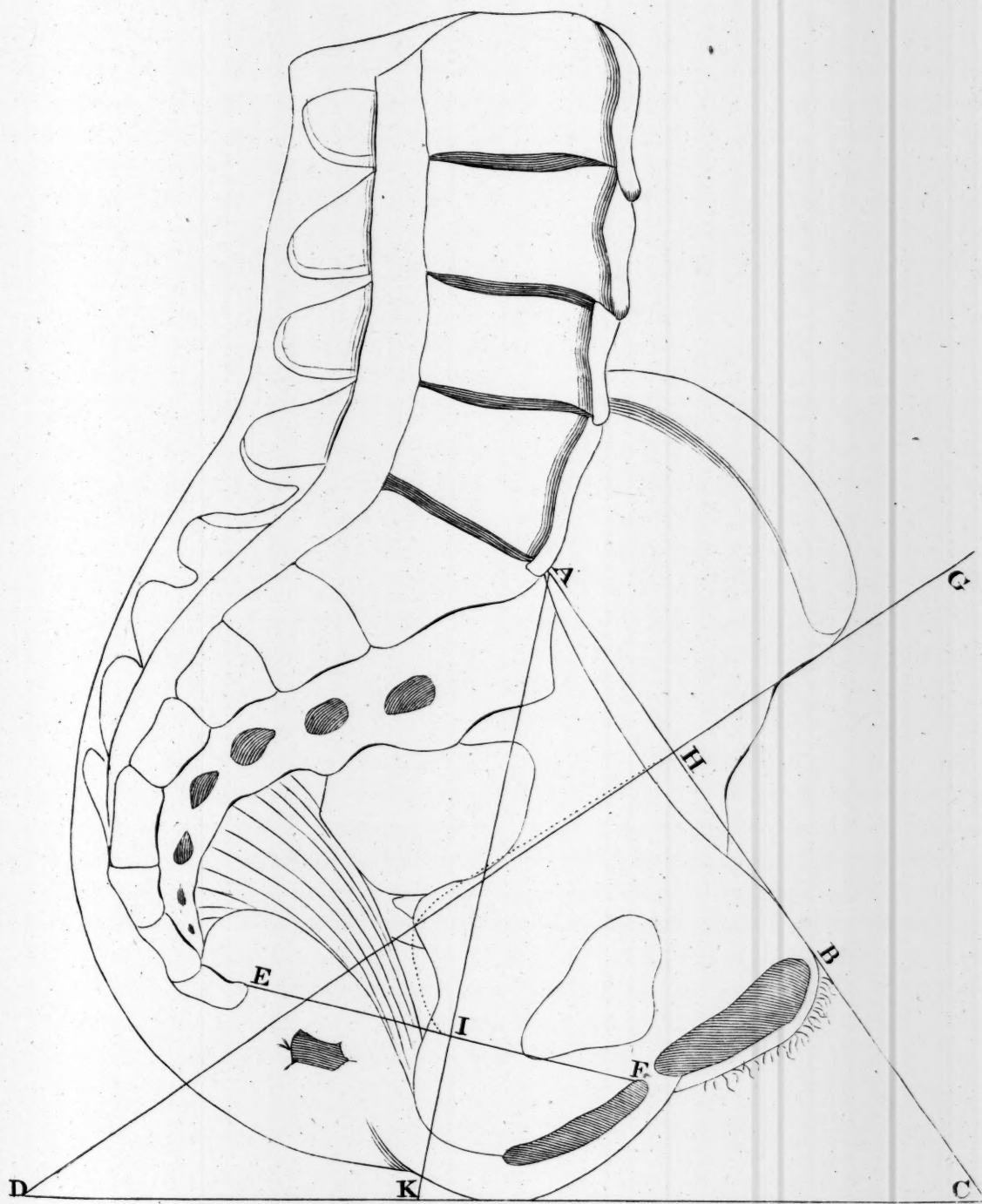


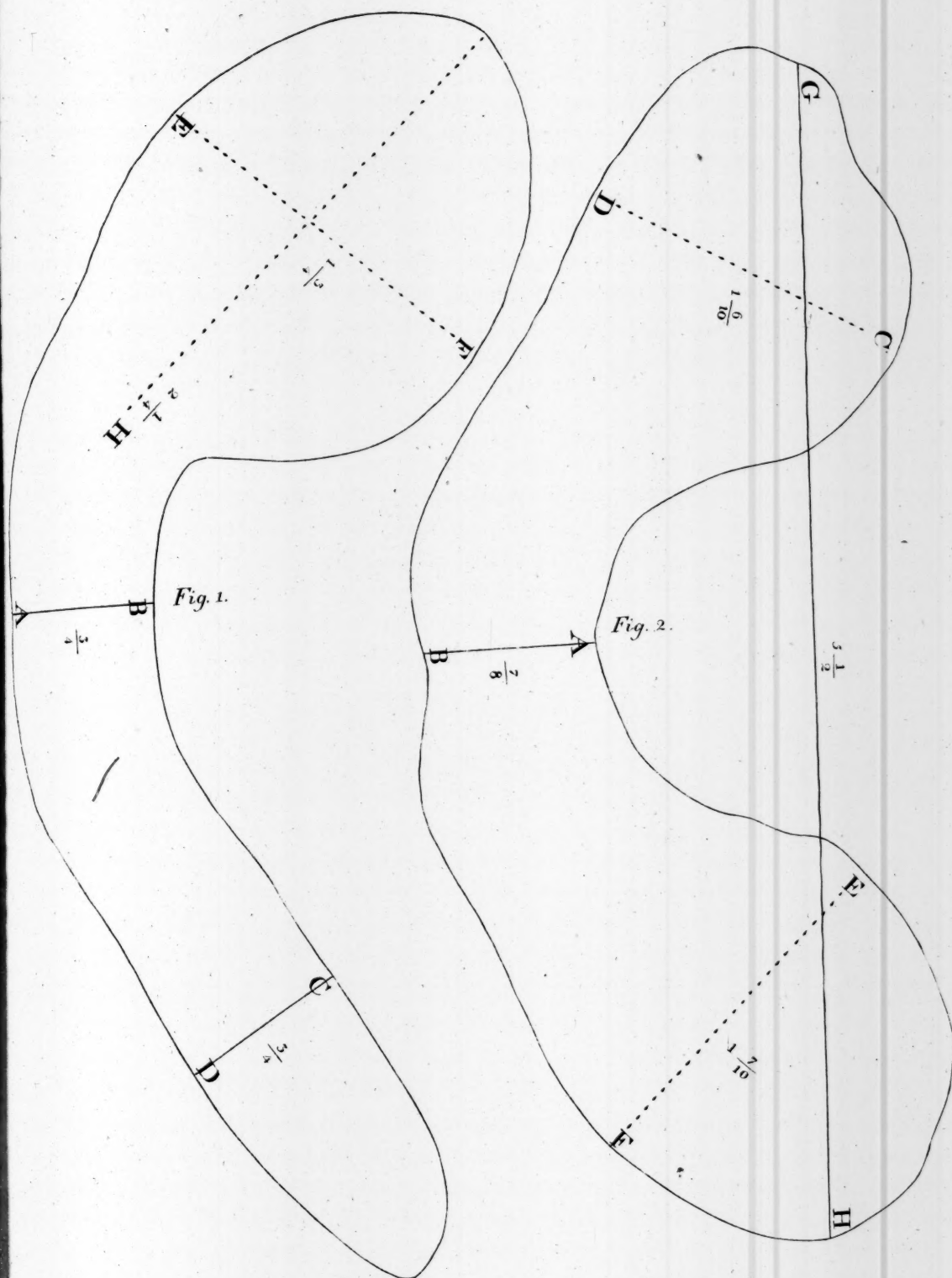


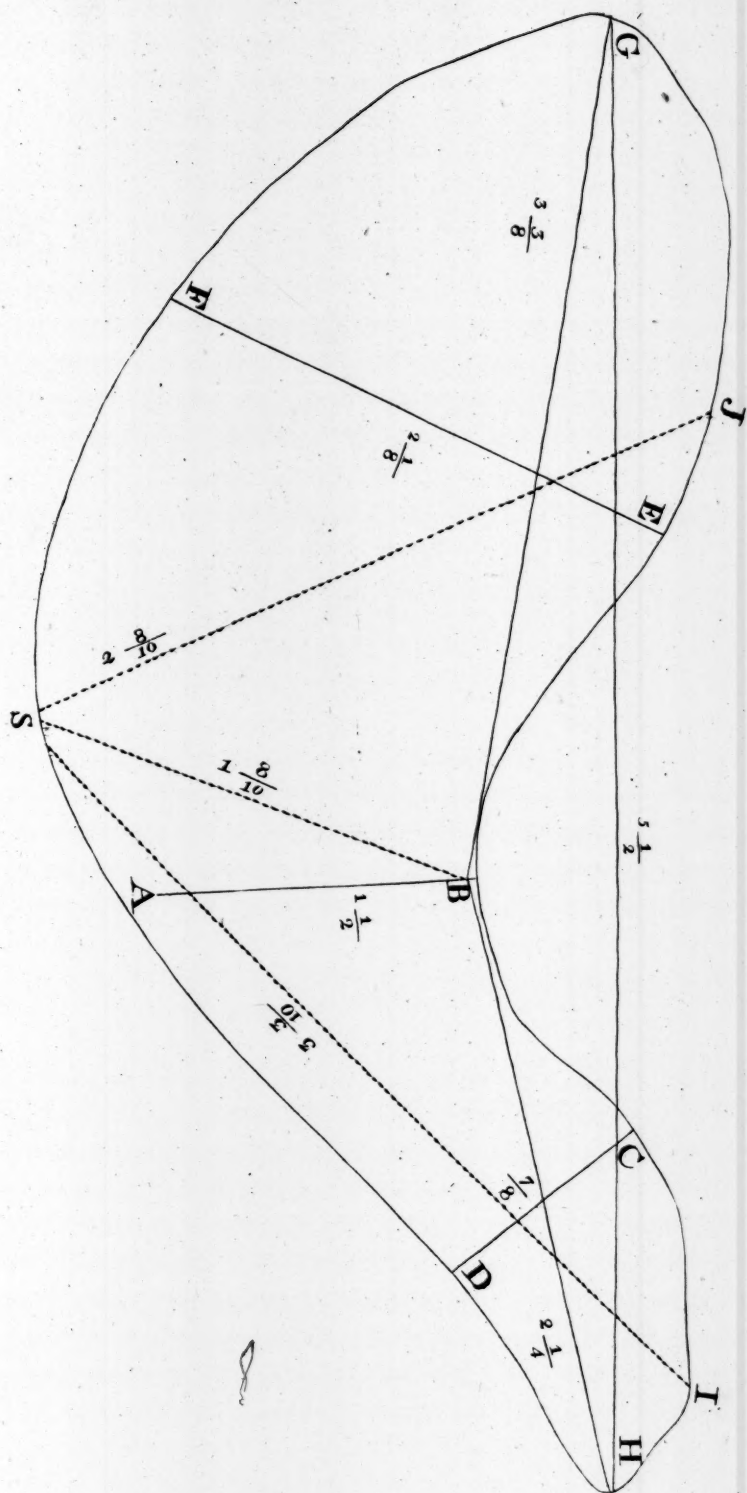


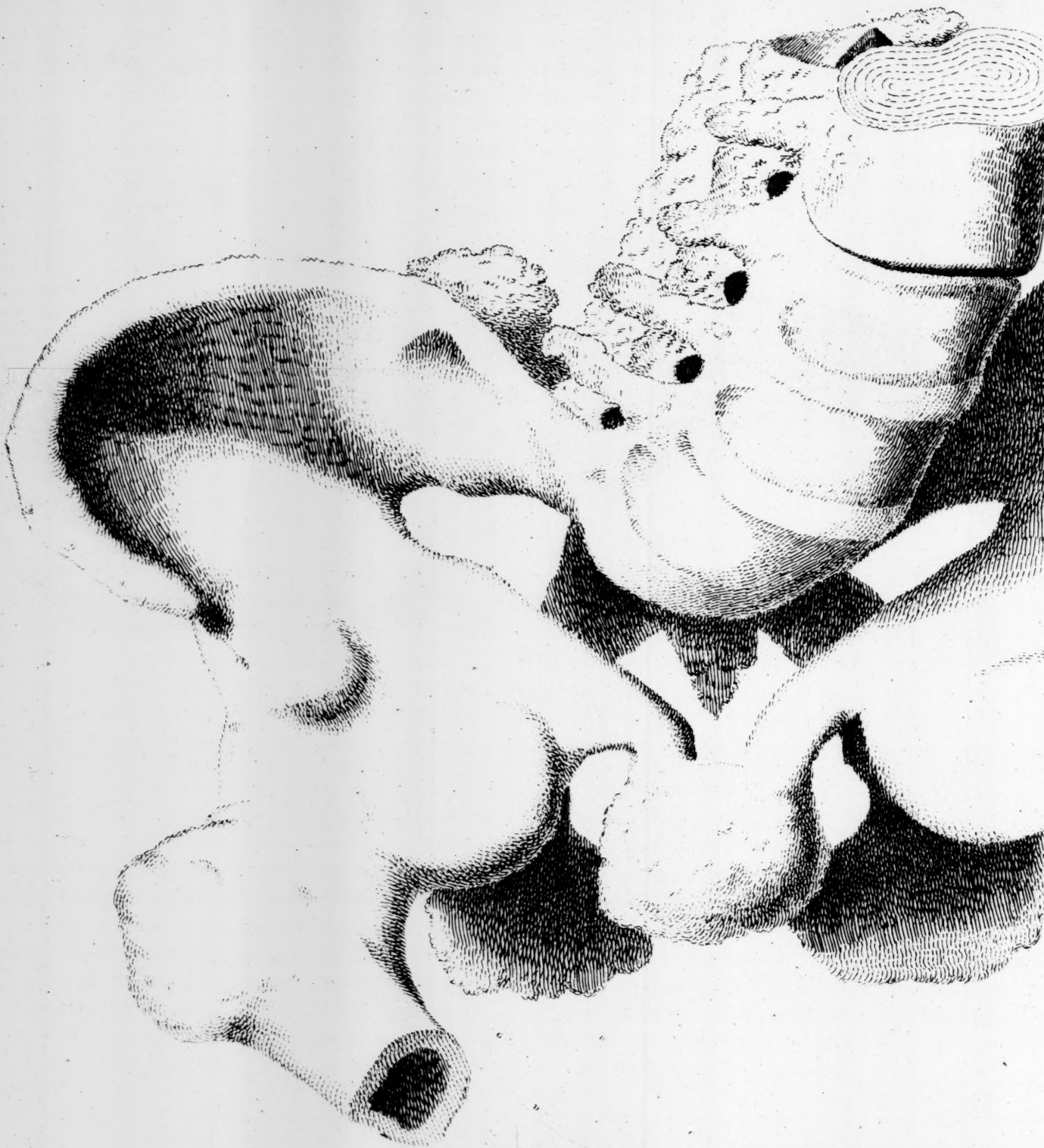




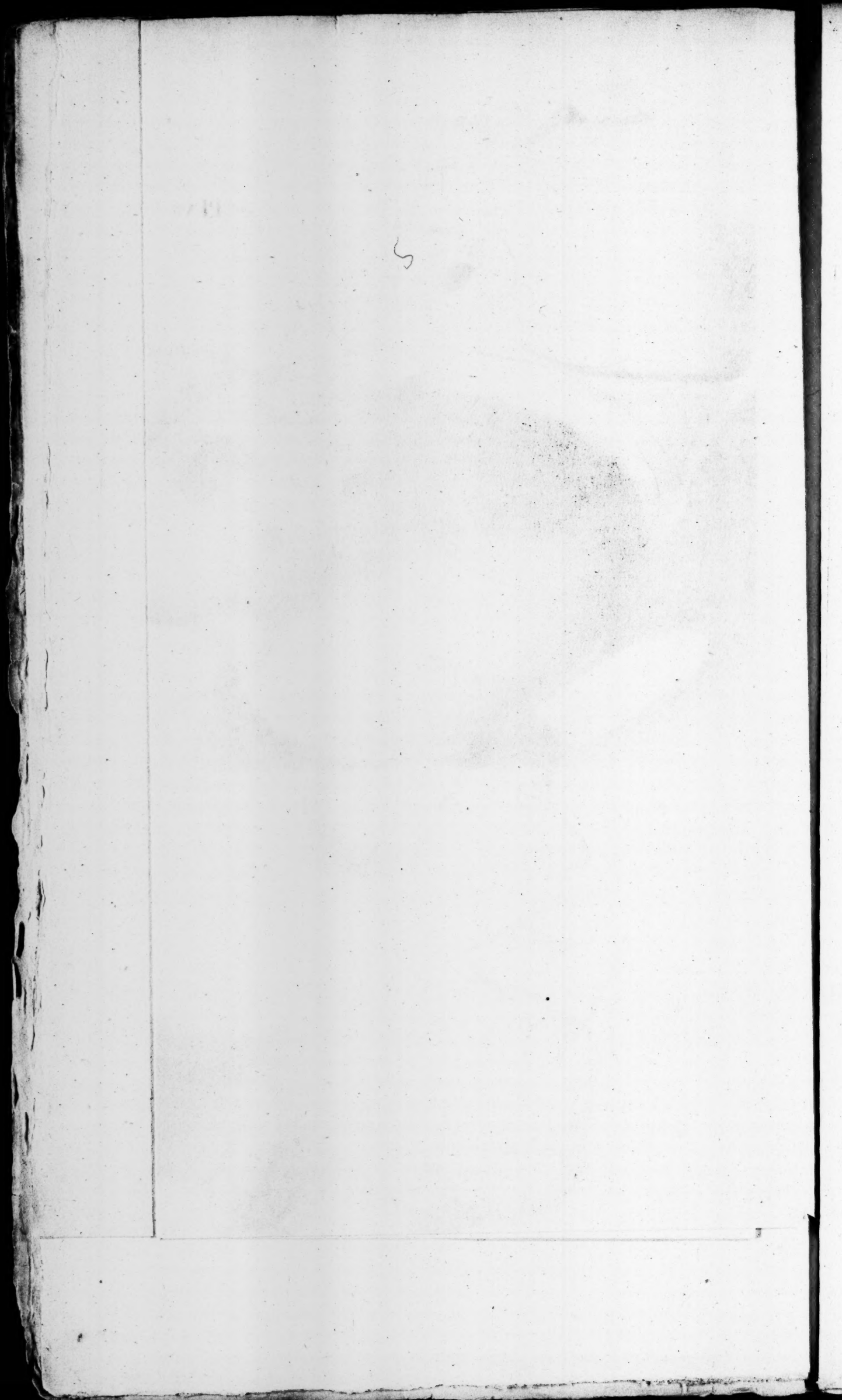


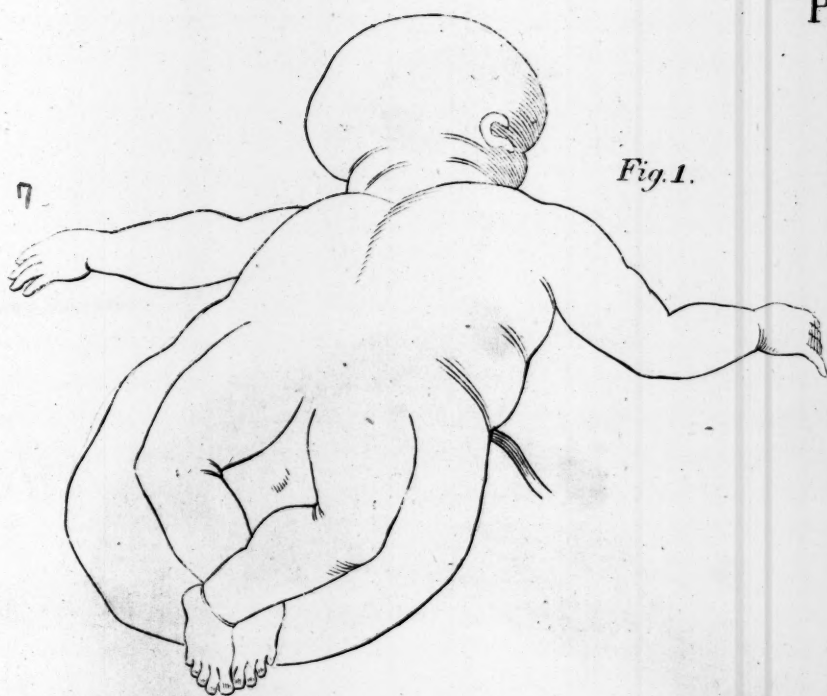




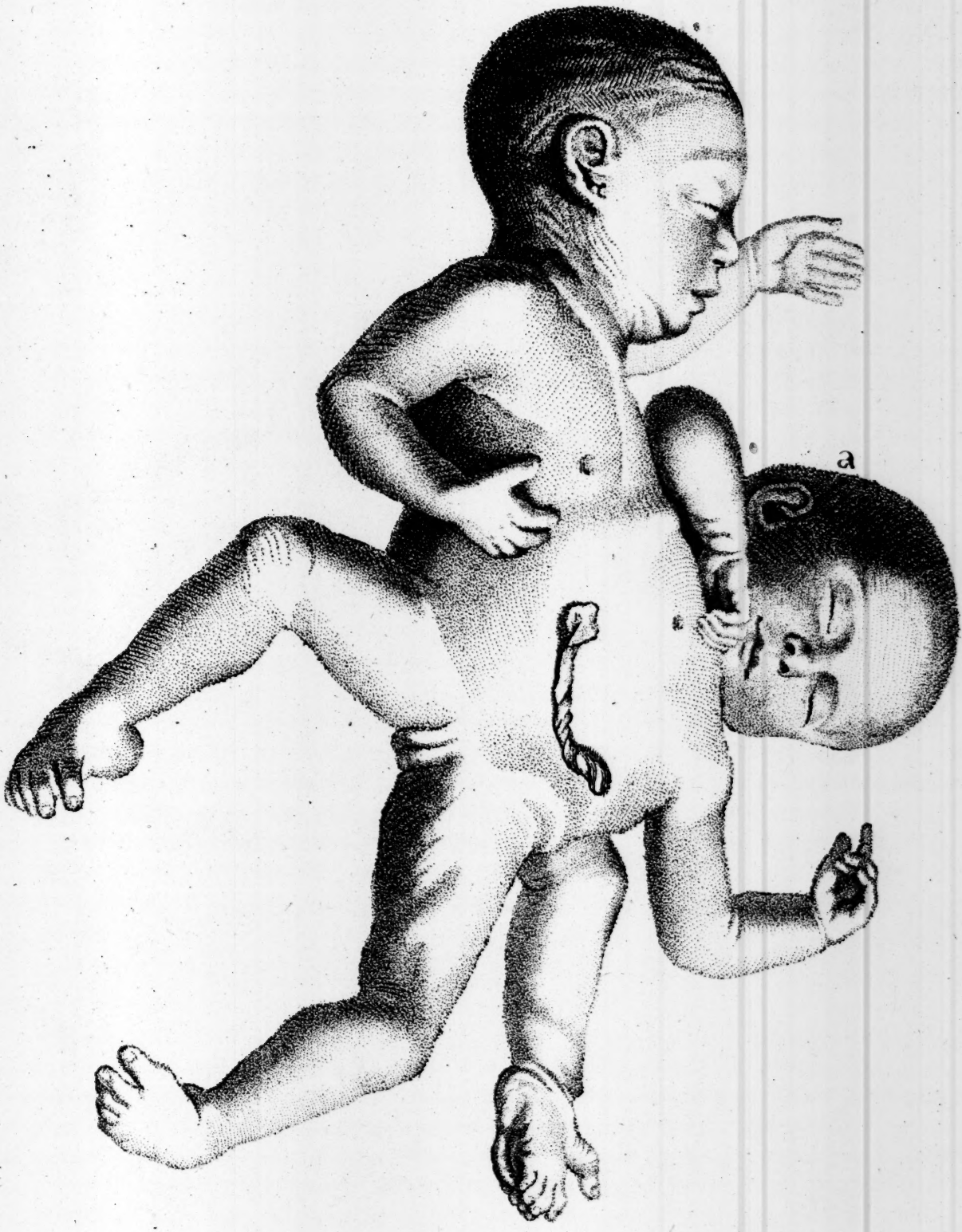














Pl. x.



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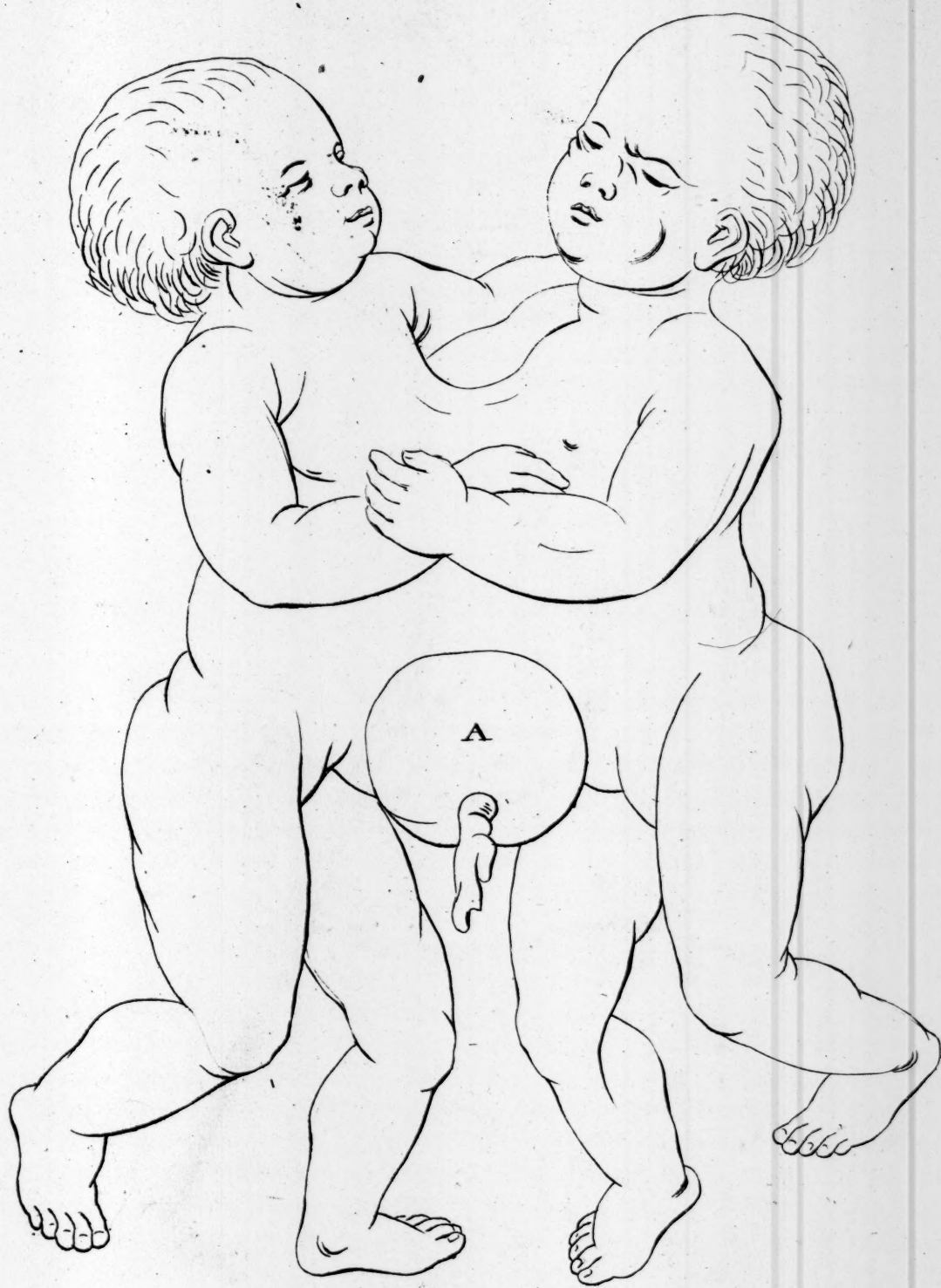




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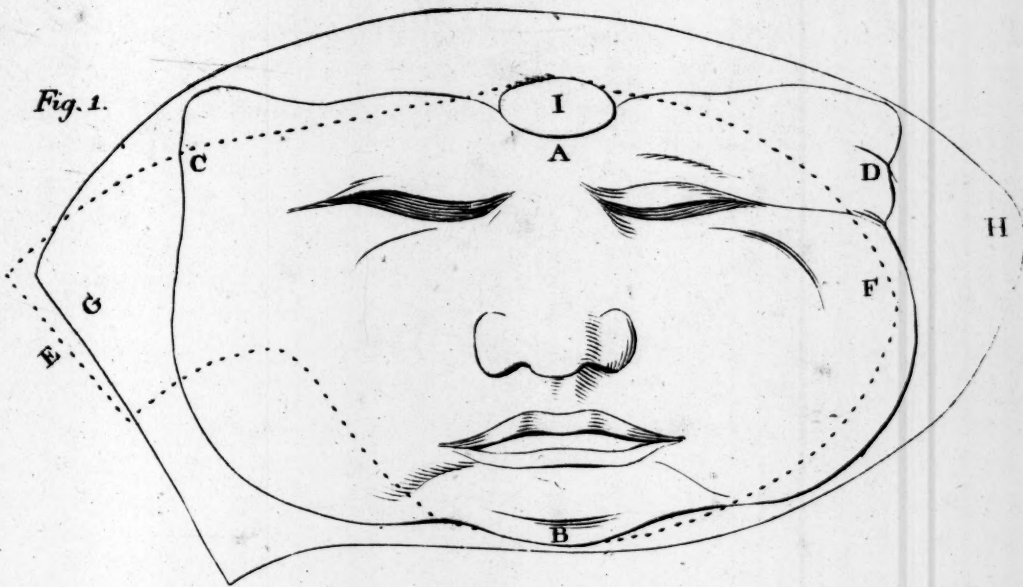


Fig. 2.

